

U.S. Automotive Parts Industry 2005 Annual Assessment



**Office of Aerospace and Automotive Industries
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EXECUTIVE SUMMARY

Production

- \$ Automotive parts industry production likely declined slightly in 2004 compared to 2003, despite stable vehicle sales. Industry analysts predict that 2005 will be a difficult year for U.S. automotive parts suppliers and vehicle makers as the market remains stable and competition remains fierce.
- \$ The Bureau of Labor Statistics (BLS), U.S. Department of Labor, reported 754,200 jobs in the automotive parts industry in 2004. This is a 1.8 percent decrease from the 768,000 jobs in the automotive parts industry in 2003. The last time that jobs increased in the automotive parts industry occurred in 2000, when jobs grew 0.3 percent to 920,300.
- \$ The domestic automotive industry (vehicles and parts) represents 7.7 percent of U.S. manufacturing employment, according to the U.S. Bureau of Labor Statistics.

Sales

- \$ North American original equipment (OE) sales for the top 150 suppliers reached \$185.3 billion in 2003. This was an increase of 2 percent from 2002 and a much smaller increase than the 9.5 percent increase to \$182.1 billion in 2002 from \$166.4 billion in 2001.
- \$ Suppliers are preparing for declines in automotive sales and production by diversifying geographically, increasing research and development, turning to joint ventures, seeking more module (complete systems, not just components) contracts, and leaving marginal segments.
- \$ U.S. automotive aftermarket is estimated to reach \$198 billion in 2005, up 4 percent from \$190 billion in 2004.

International Trade

- \$ Global consumption of automotive parts was estimated to be about \$900 billion in 2004 and will increase to \$1.1 trillion by 2010.
- \$ U.S. exports of automotive parts in 2004 were \$52.6 billion, an increase of 8.5 percent over 2003 levels, according to U.S. trade data. This is about 19 percent of the world's trade in automotive parts.

- \$ Exports to Canada and Mexico accounted for 78 percent of the total U.S. automotive parts exports in 2004.
- \$ U.S. imports of automotive parts were \$83.4 billion in 2004, an increase of 12.1 percent over 2003 levels.
- \$ The United States imported \$43.3 billion worth of automotive parts from Mexico and Canada in 2002. These imports accounted for 52 percent of the total U.S. automotive parts imports.
- \$ Automotive parts trade with China has grown significantly in recent years. In 2000 the United States imported \$1.6 billion worth of automotive parts from China. In 2004, this more than doubled to \$3.9 billion. China's share of the U.S. original equipment (OE) market rose from less than 1 percent in 1997 to 2 percent in 2004. The result is a growing trade deficit in automotive parts with China.
- \$ The U.S. trade deficit in automotive parts increased to \$30.8 billion in 2004, an 18.7 percent increase over \$26 billion in 2003. This is the largest trade deficit for U.S. automotive parts in history.

Industry Issues

- \$ Despite the lifting of most steel safeguards, prices of steel have remained high. The continued high prices of steel continue to hurt suppliers. Their profit margins are squeezed by high raw material costs and price-cut demands from automakers.
- \$ The problems are particularly acute in automotive parts sub-sectors with a large reliance on steel inputs. Several auto parts suppliers, including Tower Automotive and Intermet, have sought bankruptcy protection, citing the cost of steel as a primary reason. Automakers have also joined with auto suppliers in asking the U.S. International Trade Commission to lift the remaining safeguard duties on steel imports from Brazil, Japan, and Russia.
- \$ Industry analysts predict that, of nearly 800 major suppliers in 2000, fewer than 100 will be left by 2010 as a result of bankruptcies, mergers and acquisitions, and migration to other industries.
- \$ There has been a decline in the number of mergers and acquisitions, from 61 in 1998 to 27 in 2004.
- \$ There is concern among many industry representatives and analysts about the current business model and relationship between the "Detroit 3" vehicle assemblers (GM, Ford, and Chrysler

side of DaimlerChrysler) and their suppliers. Many feel the adversarial approach is driving down the already low profit margins of the suppliers to a point where they are no longer viable.

Summary

The outlook for the U.S. automotive parts industry is not as positive as it was for the last few years. Economic indicators were rebounding favorably and both domestic light vehicle production and new vehicle sales grew slightly in 2004. The U.S.-based automakers were hoping to bolster production and sales with the introduction of many new, locally assembled models. Normally, new models are good harbingers for the automotive parts industry. However, in early 2005, sales of many U.S.-branded vehicles were lower than expected and automakers announced production cuts. The U.S. automotive industry can expect more suppliers to depart as their profit margins are squeezed by vehicle manufacturers' demands for price cuts, by price increases for raw materials, and by increased competition from suppliers in low labor-cost countries.

Industry experts expect that domestic vehicle manufacturers will continue to lose market share to U.S.-affiliates of foreign manufacturers and imports. U.S. vehicle manufacturers struggled in 2003 and 2004 to make profits on cars and trucks, cutting costs and offering incentives to maintain sales. These cost cuts and incentives affect the suppliers, from whom automakers continue to demand cost cuts, while reducing their volume requirements. U.S. parts suppliers are trying to become suppliers to the foreign-affiliated (transplant) automakers to offset those losses. However, many are finding it difficult to get into transplant automakers' supply chains, in part because transplants have previously established relationships with home-market (foreign) suppliers, whether through imports or through U.S.-affiliates. Furthermore, transplant-produced vehicles usually have a lower percentage of U.S. parts content than vehicles assembled by the Detroit 3.

The automotive parts industry experienced heavy growth in the late 1990s, during a period of strong U.S. economic growth and robust auto sales. However, as the economy took a downswing at the beginning of the twenty-first century, so did the automotive parts industry, which experienced slow growth in production and a decrease in exports. In 2003, the U.S. economy showed signs of rebounding, helping the automotive parts industry to rebound as well, particularly for aftermarket sales. Despite sales and production of vehicles that were relatively stable in 2004, the U.S. automakers experienced declines in their market shares.

Definition

Automotive parts are defined as either Original Equipment (OE), or Aftermarket parts. Original equipment are parts that go into the assembly of a motor vehicle (automobile, light truck, or truck) or are purchased by the assembler for its service network and referred to as OES parts. Suppliers of OE parts are broken into three tiers. The first tier are the "Tier 1" suppliers, who sell finished components directly to the vehicle manufacturer. The next tier are "Tier 2" suppliers, who sell parts and materials for the finished components to the Tier 1 suppliers. The third tier are "Tier 3" suppliers who supply raw materials to any of the above suppliers or vehicle assemblers. There is often overlap between the tiers.

Aftermarket parts are broken into two categories: replacement parts and accessories. Replacement parts are automotive parts built or rebuilt to replace OE parts as they become worn or damaged. Accessories are parts made for comfort, convenience, performance, safety, or customization, and are designed for add-on after the original sale of the motor vehicle.

The North American Industry Classification (NAIC) codes used by the International Trade Administration (ITA) of the U.S. Department of Commerce to identify automotive parts are:

336211	Motor Vehicle Body Manufacturing
336311	Carburetor, Piston, Piston Ring, and Valve Manufacturing
336312	Gasoline Engine and Engine Parts Manufacturing
336321	Vehicular Lighting Equipment Manufacturing
336322	Other Motor Vehicle Electrical and Electronic Equipment Manufacturing
336330	Motor Vehicle Steering and Suspension Components
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Powertrain Parts Manufacturing
336360	Motor Vehicle Seating and Interior Trim Manufacturing
336370	Motor Vehicle Metal Stamping
336391	Motor Vehicle Air-Conditioning Manufacturing
336399	All Other Motor Vehicle Parts Manufacturing

The NAIC codes for tires and tubes (326211 and 326212) and storage battery manufacturing (335911) are not included in the ITA NAIC code definition of automotive parts, because they are not broken out to a level identifying only those meant for motor vehicle use. However, tires, tubes, and storage batteries for automotive use are part of the Office of Aerospace and Automotive Industries' Harmonized Tariff System (HTS) trade definition ([See Appendix 1](#)).

Other definitions used in this report include product lists from Standard Industry Classification (SIC) system and Harmonized Tariff Schedule (HTS) system. These codes are found in Appendix 1.

Economic Overview

The U.S. automotive parts industry has long played a vital, yet often underestimated, role in the U.S. economy. Naturally, the automotive parts industry is directly affected by the state of the motor vehicle industry, a key element in the country's Gross Domestic Product (GDP) ([Charts 1 and 2](#)).

U.S. production of light vehicles was 11.6 million units in 2004, a decline of 1.7 percent from the 11.8 million units produced in 2003. The record high production of light vehicles was in 1999 with 12.6 million units.

Almost all economic variables, such as real GDP growth per capita, real disposable income growth per capita, and employment experienced improvement in 2004. Historically, the automotive sector closely tracks these economic indicators, in part because the automotive sector is a major component of these indicators. There are some worrisome indicators on the horizon, however. The large U.S. deficit is

troubling because, traditionally, large deficits have resulted in higher interest rates. Unfortunately, consumers have high debt loads making them very sensitive to interest rates. Additionally, there are structural variables negatively influencing vehicle sales, including lower scrappage rates of vehicles because of increased reliability of new vehicles, lower used vehicle prices, resulting in a reduction in the equity consumers have in their trade-in, and escalating operating costs.¹ The U.S. economy is regaining its legs and because the automotive industry is an important link to other economic sectors, any economic revival will affect the automotive industry. Logically, trends in the automotive parts industry follow the motor vehicle industry. However, there is a perception that even in periods of downturn in the motor vehicle sector, lost OE automotive parts production and sales will be offset somewhat as demand for replacement parts for vehicles-in-use increases. This perception is not always correct as consumers will also delay all-but-essential repairs during a recession. Additionally, the durability of parts has increased from previous decades, resulting in less need to replace many normal wear parts. Therefore, declines in OE parts production and sales may no longer be offset by increases in the demand for aftermarket parts.

According to the most recent Annual Survey of Manufacturers (with data through 2003), auto parts industry shipments of \$209 billion accounted for 5.3 percent of total U.S. manufacturing shipments (Tables 1 and 2). This is one of the highest percentage shares of any single U.S. industry. Industry employment in 2003 accounted for 5.1 percent of total manufacturing employment. The U.S. automotive parts industry is also one of the largest U.S. exporters, accounting for 6.4 percent of total U.S. merchandise exports in 2004 (Table 3). [For the complete Census report, go to < <http://www.census.gov/mcd/asm-as1.html> >].

International Trade Administration and industry associations estimate that original equipment parts account for between 67-75 percent of the value of total automotive parts production and that aftermarket equipment accounts for between 25-33 percent. It is difficult to estimate exact percentages in terms of sales because the prices paid by vehicle assemblers for original equipment parts are not comparable to prices paid by automotive consumers. Vehicle manufacturers are able to negotiate price contracts with parts suppliers on original equipment, while vehicle owners most often pay retail for automotive parts.

The Original Equipment Suppliers Association (OESA) reported that the worldwide market for Original Equipment (OE) automotive parts increased 10.0 percent from \$729.7 billion in 2002 to \$802.9 billion in 2003² (Table 4). This is the second year OE parts experienced a decline from a high of \$812 billion in 1999. The Asia-Pacific region, Europe, and North America combined account for roughly 95 percent of the global market for OE parts.

¹ Des Roissers, 2/15/04

² Original Equipment Suppliers Association, Industry Review 2002, p. 100.

A study by the OESA and RolandBerger Consultants³ estimates that the world market for OE auto parts will increase at a compound average growth rate of 3.4 percent per year between 2003 and 2010, reaching \$1.1 trillion. The U.S. market represented about 23 percent of total consumption in 2003, totaling about \$200 billion. Although U.S. OE output will increase in absolute terms, the study predicts that the U.S. share of global OE production will decline at a 2.8 percent compound average growth rate, falling from a 22 percent share to 18 percent in 2010.

The average value of parts per-vehicle declined from \$13, 413 in 2003 to \$13,346 in 2004, according to industry analysts⁴. OESA reported that this reflects a number of factors including greater global competition among parts suppliers, increased economies of scale, and cost cuts demanded by vehicle manufacturers.

Production

The U.S. motor vehicle industry expects stable sales for the next couple of years. Although sales of units are expected to remain stable in 2005 when compared to 2004 levels, it is expected that foreign vehicle makers will continue to take market share and, thus, production from U.S. vehicle makers.

The Bureau of Labor Statistics (BLS), U.S. Department of Labor, reported that employment in the automotive parts industry averaged 754, 200 jobs in 2004. This is a 1.8 percent decrease from the 768,000 jobs in the industry in 2003. The last time that jobs increased in the automotive parts industry occurred in 2000, when employment grew 0.3 percent to 920,300. However, employment fell sharply the following year to just 850,200 jobs (Table 5).

The Census of Manufacturers released in December 2004 counted 775,161 workers in the automotive parts industry (NAICS 3363211 Motor Vehicle Body Manufacturing and NAICS 3363 Motor Vehicle Parts Manufacturing) in 2002. This is a slight of 0.3 percent from the 777,774 workers in the automotive parts industry in 2001 (Table 6).

The value of U.S. automotive parts industry shipments in CY 2003 was \$209.1 billion, a 1.7 percent decrease from the \$212.6 billion in 2002 (Table 2). Industry shipments in 2004, may be slightly higher because vehicle production and sales remained stable and parts exports increased. It is expected that industry shipments may decline in 2005 because diminishing market share of U.S. vehicle manufacturers

³ #Odyssey of the Auto Industry, presented before the SAE World Congress, March 8, 2004.

⁴ . Automotive News, citing Des Roissers article using Department of Commerce data.

has led to production cut backs by these manufacturers, while local foreign-affiliated manufacturers still import significant quantities of the parts they need.

U.S. automotive parts manufacturers are under intense pressure from vehicle manufacturers to reduce prices. Auto parts suppliers expect to reduce domestic production and open more factories outside the United States because of cheaper labor and the requirement imposed by vehicle manufacturers to follow them abroad. In a study by Berger Strategy Consultants and the Original Equipment Suppliers Association (OESA), suppliers forecast a 17 percent drop in U.S. and Canadian parts manufacturing capacity by 2010.

In the United States, parts manufacturers are faced with rising operating costs, high labor wages, debt payments, increased engineering responsibilities, small profit margins, and price cut demands from vehicle manufacturers. Many suppliers of high-labor content products are turning to emerging markets where labor costs are substantially lower. Suppliers in emerging markets are also improving quality by buying used, modernized machinery from suppliers in developed countries leaving the industry.

The rebounding U.S. economy, along with many new vehicle models being introduced in 2004, were indications that auto parts suppliers may experience a better year. As many as 56 vehicle models were introduced in 2003/2004 and as many as 75 models could be introduced in 2004/2005. The number of new products gave suppliers an opportunity to grow their businesses by winning new contracts. Additionally, the new models theoretically gave suppliers a chance to diversify their customer base so they are not too reliant on just one vehicle manufacturer for their parts businesses.⁵ In early 2005, the new models did not result in increasing market share for the U.S. vehicle manufacturers and the manufacturers announced production cutbacks, indicating that 2005 could be a difficult year for U.S. automotive parts suppliers.

Aftermarket Parts

The health of the automotive aftermarket parts industry is in large part affected by the number of vehicles on the road and the age of the vehicles. There were 231.4 million vehicles registered in 2003 in the United States, compared to 229.6 million vehicles in 2002. The average age of passenger cars climbed to 9.6 years and was 8.5 years for light trucks, amounting to an average age of 9.1 years for all light vehicles in 2003. Vehicles are becoming more durable. This trend reflects improved overall durability, and indicates a growing market for replacement aftermarket parts such as filters, mufflers, brakes, and tires as well as performance and styling products.

⁵ Auto Parts Report, 2/10/04.

The largest sector in the automotive aftermarket is mechanical products such as engine, chassis, drivetrain, and suspension parts. While these products have seen substantial improvement in quality and durability at the OE level, they will eventually wear out. The Aftermarket sweet spot - between 7-12 years of age - is when these products begin to need replacement. Vehicle sales in the mid- to late-1990s indicate that there should be a large number of vehicles entering the Aftermarket sweet spot between 2003 and 2006. A downturn in the economy does not hurt the aftermarket as much as it does the original equipment market. During a downturn, there are less new cars sold, keeping older cars in use that will require maintenance. However, vehicle owners often will defer unnecessary maintenance. During good economic times, newer vehicles sales will remove some older vehicles from use, reducing necessary maintenance. However, it is during these times when the unperformed discretionary maintenance of vehicles will be accomplished.

Sales

U.S. sales of light vehicles in 2004 were 16.8 million, up 1 percent from 16.6 million in 2003. This amount was below the record 17.3 million units sold set in 2000.

Original Equipment

The size of the U.S. Original Equipment parts market was estimated to be \$159.6 billion in 2004 (Table 7 and charts 4 and 5). This is a decrease of 1.6 percent from the estimated \$162.1 billion in 2003.⁶ Of the \$159.6 billion, U.S. suppliers provided \$95.0 billion and imports accounted for \$64.6 billion. The amount sourced from U.S. suppliers went down 9.5 percent, which was more than the decrease in the size of the U.S. OE market, thus the market share of the U.S. suppliers in the OE market is decreasing. The share of U.S. OE parts suppliers went from 64.4 percent in 2003 to 59.5 percent in 2004. The highest share of U.S. OE suppliers in the U.S. OE market in recent years was 74.9 percent in 1999.

North American sales for the top 150 original equipment suppliers were \$185 billion in 2003, a 2 percent increase from 2002 levels. In 2002 the sales rebounded by about 9.5 percent, from \$166.4 billion in 2001 to \$182.1 billion in 2002⁷ (Table 8, Charts 6 and 7). Automotive News credited much of this rebound to a 5.3 percent growth in North American vehicle production, fueled by the automakers' incentive programs.

Globally, the top 100 OEM suppliers recorded \$401.5 billion in sales in 2003, an increase of 13 percent from \$353.4 billion in sales in 2002⁸ (Table 9, Charts 8 and 9). The top 10 global OEM suppliers saw a 12.8 percent increase in sales to \$166.6 billion in 2003 from \$147.7 billion in 2002.

⁶ Data supplied by Automotive News from Des Roissers, reportedly using U.S. Department of Commerce data.

⁷ Automotive News, 3/24/03, www.automotivenews.com.

⁸ Top 100 Global Suppliers insert in Automotive News, 6/16/03.

The same top ten global OEM suppliers have been in the top ten for the past 3 years. These companies are Delphi Corporation, Robert Bosch GmbH, Visteon Corporation, Denso Corporation, Lear Corporation, Johnson Controls, Magna International Inc., Aisin Seiki Co. Ltd., Faurecia, and TRW Automotive. Delphi Corporation, since its spinoff from General Motors in 1999, topped the chart as the leading global OEM supplier until 2004 when it was replaced by German supplier Robert Bosch GmbH. Robert Bosch GmbH took the number two position in 2001 from Visteon, which was spun off from Ford Motor Company in 2000. Visteon fell another notch in 2003 when Denso Corp. overtook Visteon.

In 2003, Robert Bosch threatened to surpass Delphi as the largest global OEM supplier. If the exchange rate of the dollar maintained record lows compared to the European Euro held at the end of the year, Robert Bosch's revenues would have exceeded Delphi's. Robert Bosch's Euro global sales were \$26.7 billion in 2003 (originally projected to be about 23.3 billion Euros or about \$28.4 billion at E1:\$1.22) compared to Delphi Corporation's \$28.1 billion. Both suppliers' sales rates grew in 2003 compared to 2002 sales.

Suppliers, preparing for declines in global auto sales and production, have been diversifying geographically, increasing research and development, turning to joint ventures, seeking more module contracts, and leaving marginal segments. It is expected that U.S. automakers will continue to lose domestic market share. Automakers turned to cost cutting and incentives to make profits on light vehicles. To accomplish this the automakers put pressure on parts suppliers to cut costs. The weakening dollar increased the costs of building new cars in the United States with imported parts. In 2002 and 2003, steel tariffs hurt suppliers' profit margin because of higher steel costs. Now that the steel tariffs have been lifted, the price of steel, and of other materials, is still high because of the global demand and the weakened dollar.

Aftermarket

According to some industry observers, the whole aftermarket parts manufacturing base should be rationalized, consolidated and put together and separated from OE suppliers. On the OE side, a company averages just four customers and in the aftermarket they typically might have 4,000. On the OE side, they are selling 100,000 units per customer, while in the aftermarket they are shipping 10 units. The industry observers argue that they are different businesses and the only logic to put them together was that they are all auto parts. Other industry observers disagree. There are good synergies that exist for suppliers in terms of technology, facilities and manufacturing and engineering where making aftermarket parts makes good business sense for OE suppliers. Suppliers have already invested in the tooling, design, engineering and testing. The profit margins of the aftermarket are also usually highly attractive compared to the OE side.

The automotive aftermarket sector does not feel the same price and cost cut pressures from OEMs that the OE supply chain feels, but the sector is still affected by the state of the economy. The size of the U.S. automotive aftermarket in 2005 is projected to be about \$198 billion in 2005, up 4 percent from the previous year, according to the Automotive Aftermarket Industry Association (AAIA). Factors

influencing the size of the aftermarket include economic recovery, number of vehicles reaching prime aftermarket age of about 8 years, cost of gas, amount of unperformed maintenance, and the ability to get or keep used cars in circulation.

In a 2002 study by Freedonia Group, the automotive aftermarket⁹ in North America is projected to increase at an annual rate of 3.5 percent, reaching \$53 billion by 2006. The best prospects were in the electronic and electrical equipment aftermarket niche, including sound systems, multi-media, telematics, and safety controls. Because of increased quality and durability in original equipment, the aftermarket experienced a slowing of demand, but as these vehicles continue to age, the aftermarket demand should increase measurably by 2006.

U.S. Automotive Parts Trade¹⁰

According to latest United Nations data available, the United States exported \$58.3 billion worth of automotive parts in 2003 and accounted for 16.6 percent of the world's automotive parts exports. The United States was the world's leading export primarily because of shipments to Canada and Mexico for use in vehicles assembled there for the U.S. market (Table 10).

According to U.S. Census data, the United States exported \$52.6 billion worth of automotive parts in 2004. This is an increase of 8.5 percent from the \$48.5 billion worth of automotive parts in 2003 (Table 11, Charts 10 and 11). Exports reached \$53.7 billion in CY 2000 but fell 7.3 percent to \$49.8 billion in CY 2001. Census 2002 data showed that U.S. automotive parts exports increased about 0.6 percent over 2001 rates to \$50.1 billion, but plunged 3.2 percent in 2003 to the lowest export value since 1998. Automotive parts exports to Canada (\$29.9 billion) and Mexico (\$11.3 billion) accounted for 72.8 percent of the total U.S. parts exports in 2004 (Chart 12). U.S. automotive parts exports to Japan and the European Union accounted for \$6.1 billion, or 12 percent, of the total U.S. automotive parts exports. Combined, the NAFTA, European Union 15, and Japanese markets accounted for 90 percent of total U.S. automotive parts exports in 2003.

The United States imported a record high amount of automotive parts in 2004, reaching \$83.4 billion, an increase of 12.1 percent from \$74.5 billion in 2003 (Table 12, Charts 10 and 13). In 2004, Canada, accounted for \$20.1 billion worth of U.S. automotive parts imports and Mexico accounted for \$23.1 billion. Together automotive parts from these two countries accounted for 52 percent of the total U.S. automotive parts imports (Chart 14). This is a slight decrease in the percentage of automotive imports coming from NAFTA partners from past years, primarily because of increased input from China. Rounding out the top five supplier countries of automotive parts to the United States in 2004 were Japan (\$15.5 billion), Germany (\$6.1 billion), and China (\$3.9 billion). Automotive parts imports

⁹ Parts at manufacturer level, not retail sales and does not include service.

¹⁰ U.S. Department of Commerce, Bureau of the Census, trade data, unless otherwise noted.

from China rose substantially, 39.3 percent, from \$2.8 billion in 2003. Combined, Mexico, Canada, Japan, Germany, and China accounted for \$68.8 billion or 82 percent of the total U.S. imports of automotive parts.

As a result of the sharp increase of automotive parts imports, the U.S. trade deficit in automotive parts increased to a record level of \$30.8 billion in 2004, an 18.7 percent increase over 2003 ([Table 13, Charts 10 and 15](#)). This is the largest trade automotive parts trade deficit in history, and it is expected to continue to climb as U.S. automotive parts suppliers and vehicle makers lose market share to increasingly competitive foreign manufacturers.

With the United States running a large trade deficit and huge budget deficit, the U.S. dollar is weakening and a weaker dollar usually isn't good news for the U.S. economy or consumers. A weaker dollar puts pressure on the Federal Reserve to raise interest rates to attract foreign capital, consumers face higher prices for imports, and rising prices for imports increase the odds of inflation. On the other hand, the auto supply sector might be a beneficiary of the falling dollar. Europeans and Japanese vehicle assemblers will likely see their exports drop as their products become more expensive to U.S. consumers. However, U.S. parts producers will still see increasing cost competition from China. Fearing a rise in the euro, European companies have moved production to China or bought more Chinese parts. European companies with a presence in the United States may increase production in the United States or purchase more components from U.S. suppliers. Foreign-affiliated assemblers will be increasing the share of U.S.-made components used in cars. Japanese automakers are also stepping up their U.S. production and sourcing. If the weaker dollar continues, U.S. auto parts suppliers can sell more overseas because their dollar-denominated product becomes cheaper than those of European and Japanese suppliers.

Exporters of U.S. produced aftermarket parts should see immediate benefits from a weaker dollar because their sales are made on short-term purchase orders, rather than the long-term contracts for OE parts.

China

China is currently the world's third largest automotive market, behind the United States and Japan. It is estimated that automakers and suppliers have invested more than \$30 billion in plants and research facilities in China. Most of the world's largest Tier 1 suppliers already have facilities in China. They were encouraged to locate there by their customers, the global vehicle manufacturers operating in China, since the majority of China's traditional domestic suppliers were not competitive. The recent influx of foreign suppliers into China has helped to improve productivity and parts quality, and have lead some industry analysts to predict that China's supplier industry could become globally competitive within five to ten years. Foreign suppliers continue to announce plans to open or expand their Chinese operations to meet the anticipated demand of the growing Chinese automotive market, as well as protect themselves from future currency fluctuations. In addition, production capacity for auto parts in China will most likely further expand for the export market due to China's low labor costs, quality improvements and the automotive industry's constant pressure to reduce costs.

The Chinese government's auto policy strongly encourages the development of the local supplier industry, as well as automotive-related R&D in China. Although there are no longer formal local content requirements, beginning on April 1, 2005, if imported parts for assembly in China have the "collective features of a complete vehicle," they will be taxed at the same rate as a fully-assembled imported vehicle (30%), rather than as auto parts (ranging from 13% - 17%). China's definition of a "complete vehicle" incorporates combinations of imported assemblies and sub-assemblies, and includes completely knocked down (CKD) and semi-knocked down (SKD) kits. Beginning on July 1, 2006, the higher tariff rule would be extended to any imports of auto parts valued at 60 percent or more of the total price of a complete vehicle. These measures will no doubt decrease the number of vehicles built in China using "completely knocked down" (CKD) or "semi-knocked down" (SKD) assembly methods, and encourage the use of local suppliers.

When deciding whether or not to set up an operation near a specific customer in China, U.S. suppliers need to determine if economies of scale can be achieved, if energy sources are reliable, and if they will be able to source from reliable lower-tier suppliers or import subcomponents at a competitive price. If entering into a joint-venture arrangement, any potential partner should be carefully evaluated. Automotive-related counterfeiting in China also remains a concern for the industry, especially when sharing intellectual property with partners or suppliers. When considering sourcing from China, U.S. companies are cautioned to not be lured by price and/or low wage rates alone, but to consider their potential suppliers' quality levels, a supplier's technical and engineering expertise to cope with design changes, as well as all of the various logistical factors, such as necessary lead time, and delivery schedules and costs.

Free Trade Area of the Americas (FTAA)

The Free Trade Area of the Americas (FTAA) could offer significant export and investment opportunities for the U.S. automotive industry. It may also provide a framework under which the industry can better integrate its hemispheric operations. However, because of the multiplicity of existing and emerging trade arrangements in this region, the extent of the FTAA's potential impact is difficult to assess.

What is clear is that the United States could be significantly disadvantaged if it does not participate in these negotiations in a meaningful way. While our borders are effectively open to imports from these nations, we do not enjoy reciprocal access. The North America Free Trade Agreement (NAFTA) negotiations with Mexico clearly indicate the potential for U.S. firms. While imports from Mexico have risen significantly over the past several years, they would have done so even if the NAFTA agreement did not exist, as our market was already open to Mexico. The difference has been the tremendous surge in U.S. exports to Mexico because of our improved access to its market. Shipments of motor vehicles and parts have increased from \$7.5 billion in 1993, the year before the agreement, to \$13.7 billion in 2003, an increase of over 83%.

Central Europe

There is automotive parts market potential in central Europe because of cheap labor, closeness to Western markets, and economic reforms that are beginning to revive markets. For example, Slovakia, located between Czech Republic, Poland, and Hungary, is receiving significant investments and production from Johnson Controls and Delphi Corporation.¹¹ Central and East European countries are also reaping benefits from a strong euro that encourages European suppliers and vehicle makers to outsource production and to increase parts purchases from eastern and central Europe.

Russia

The Russian market holds great potential for automotive growth, second only to China's and maybe India's. Russia is working toward accession into the WTO and has lowered duties on imported automotive parts. However, the Russian market is burdened with crime, regulatory restrictions, import barriers, and political uncertainty. Ford, GM, and Renault currently build cars in Russia. Volkswagen and Toyota are considering their options, and Fiat has signed a deal to export its vehicles into Russia. As vehicle manufacturers begin to have a greater presence in a country, it draws automotive parts suppliers to provide both original equipment and aftermarket parts for the vehicles. European suppliers or suppliers with European facilities probably will have easier access to the Russian market, than will firms in North America.

JAMA Data Analysis

In the 1987 Market Oriented Sector Selected (MOSS) U.S.-Japan talks, the Japanese Government announced that the Japanese Automobile Manufacturers Association (JAMA) would voluntarily provide JAMA members' U.S. parts purchasing data to the U.S. Government. This would be the aggregate value of parts purchased from U.S. parts manufacturers for use in the United States and Japan, respectively. The semi-annual data would list the value by six parts categories: 1.) engine, 2.) body, 3.) electrical, 4.) chassis, 5.) accessories, and 6.) materials. When the U.S.-Japan Automotive Agreement was signed in 1995, JAMA again agreed to provide similar data, and also to break out original equipment (OE) and original equipment service (OES), or parts purchased for dealership repairs. This format was continued after the two governments agreed to create a new, stand-alone Japan-U.S. Automotive Consultative Group based on the principles of the Japan-U.S. Economic Partnership for Growth, signed June 30, 2001. The latest analysis of JAMA data available is for April-September 2004. [For more, see < <http://www.ita.doc.gov/td/auto/jamaanalysis105.pdf> >.]

¹¹ Automotive News, 2/9/04

In 2004, the value of U.S.-made auto parts exported to Japan fell 25 percent to \$1,534 million the lowest level in eleven years. The Japanese assembler's purchases of U.S.-made parts for use in their facilities in the United States has at times failed to keep pace with the increase in those plants' production. Japanese carmakers increased their purchases of parts to be used in their North American factories by 7.9 percent in 2003 from 2002, to \$17.94 billion, but in the same period Japanese vehicles produced in U.S. rose 10.7 percent to 2.79 million. Troubled Japan-based vehicle assembler Mitsubishi apparently even made moves in 2004 to reconstitute its closed, keiretsu-style supplier association.¹²

Remanufacturing Survey

Remanufactured automotive parts represent an estimated \$75-90 billion industry worldwide. Based on estimates by the U.S. Automotive Parts Rebuilders Association (APRA), \$35-\$40 billion in remanufactured auto parts, plus associated equipment and supplies, were marketed in the United States in 2004. Since domestic demand for remanufactured automotive parts in the United States has begun to show little annual growth, it is imperative that U.S. parts remanufacturers and the associated equipment and supplier industry look outside the United States for increased sales opportunities. A remanufacturing survey was conducted by the U.S. Department of Commerce to give the U.S. parts remanufacturing industry a starting point for determining which areas of the world show potential growth for the industry and some of the limitations, costs, and other information regarding the parts remanufacturing industry in individual countries. [For more, see < <http://www.ita.doc.gov/td/auto/remanparts.pdf> >.]

Industry change/restructuring

The Original Equipment Suppliers Association (OESA) reported that the U.S. automotive industry may lose half of its domestic parts suppliers by 2010 because of demands from automakers for cost and price cuts and increased competition. Automakers and Tier 1 suppliers demanded an average of 6.3 percent in price reductions in 2003, while suppliers agreed to cuts of 3.6 percent. In a survey conducted by OESA and Roland Berger Consultants¹³ it was reported that only 14 percent of its surveyed participants managed to meet their cost reduction targets in 2000-2002. Unfortunately those surveyed do not see this pressure slackening. In fact, 12 percent expect to be struggling with 20 percent targets in 2003-2006, versus the 6 percent that they faced in 2000-2002. If this trend continues, suppliers will be forced to consolidate and to move some operations off-shore to stay competitive. Fifty percent of the U.S. supplier base could disappear by 2010. [For more, see < <http://www.ita.doc.gov/td/auto/SupplyChain.pdf> >.]

¹² "Mitsubishi Moves to Reinstate Closed Supplier Group," Automotive News, October 18, 2004, pg. 6

¹³ #Odyssey of the Auto Industry, presented before the SAE World Congress on March 8, 2004.

This consolidation will have an impact on manufacturing jobs in the United States. Nonetheless, suppliers soon will face a shortage of skilled workers if they don't find new ways to attract, train, and keep them, according to Delphi Corporation CEO J.T. Battenberg III.¹⁴ Many longtime employees will be retiring in the next few years and the generation behind the baby boomers may be unable to fill the gap, even with productivity improvements.

Delphi Corporation announced CY 2004 revenue of \$28.7 billion, up 2 percent from \$28.1 billion in 2003. Increasing its non-GM revenues, 46 percent of the revenues came from customers other than GM in 2004. As part of its restructuring, Delphi has cut 9,600 jobs worldwide between October 2003 – December 2004, cut 3,650 jobs and shed 12 facilities in 2003, and announced in December 2004 that it would cut 8,500 positions, or up to 5 percent of its work force in 2005.

Visteon has been constrained by the agreement that the United Automotive Workers (UAW) and Ford reached when spinning off Visteon in 2000. In late 2003, Ford said that it will take a \$1.6 billion charge against earnings for the fourth quarter as a cost of restructuring its relationship with Visteon. The deal requires Visteon to guarantee annual price reductions through 2007, but Ford will help Visteon lower its labor costs. One of Visteon's largest cost burdens has been the 20,000 UAW workers who are considered Ford employees under the 2000 spin-off agreement. Visteon reimburses Ford for the workers' wages and benefits. Under the new deal, Ford will transfer back to Ford plants as many of those workers as possible, allowing Visteon to replace them with new UAW workers hired under a lower wage scale.¹⁵

Despite the new agreement, Visteon has been struggling. It lost \$2.7 billion in 2003 and 2004, and has not posted an annual profit since it was spun off from Ford in 2000. Ford and Visteon worked out details of a restructuring in early 2005 that would allow Visteon to reduce the monthly payments by \$25 million a month at least through 2005 for the 17,700 hourly workers who are still technically on Ford's payroll. Visteon also won't be obligated to reimburse Ford for any profit-sharing payments to UAW hourly workers earned in 2005 and payable in 2006. Ford also agreed to purchase about \$150 million worth of new factory equipment and will accelerate payments to Visteon for parts. In exchange, Visteon has agreed not to seek price increases to offset the higher costs of raw materials, guarantees to keep sending parts to Ford, and will comply with its deals with the automaker and the UAW.

Since the formation of the United Automobile, Aerospace, and Agricultural Union (UAW) in the 1930's, the philosophy of the union always has been "the same pay for the same job". In other words, everyone in the same job classification receives the same hourly wage rate and benefits. In recent negotiations with most U.S. parts producers, this philosophy has changed. While most union members already on a company's payroll will retain their current wage rate, the UAW and many of the parts

¹⁴ Automotive News, 12/20/03.

¹⁵ AutoParts Report, 12/24/03

manufacturers have agreed to new contracts which will enable the manufacturer to pay new workers a lower wage rate and fewer or less costly benefits.

The principle reason for the change in attitude is that UAW membership (active members) slipped from 1.5 million in 1979 to 624,000 at the end of 2003. The UAW leadership decided that it is better to keep jobs in the United States at a lower wage rate than lose these jobs to either outsourcing overseas or to non-UAW manufacturing plants in the United States. Based on the most recent UAW contracts, it appears most UAW members also agree with this change. [For more, see < <http://www.ita.doc.gov/td/auto/Unions.pdf> >.]

As the world's major auto makers attempt to continue to expand their global manufacturing operations, U.S. OE suppliers have responded by revamping operations to be able to manufacture for and supply auto makers worldwide. Several of the largest U.S. auto parts suppliers, including Delphi, Visteon, Lear Corp, and Tenneco, have had to eliminate jobs, reorganize, and move some production off-shore.

Because of its large share of total domestic production, employment, and exports, increasing the U.S. automotive parts industry's domestic and international competitiveness is of vital importance to the entire U.S. economy. The health of many major U.S. industries, such as metals, plastics, and electronics, is dependent on the performance of the U.S. automotive industry. Moreover, increased exports of U.S. automotive parts could result in an increase in high-wage jobs, or in their preservation. The Economics and Statistics Administration of the Department of Commerce estimated that every \$1 billion in additional U.S. automotive parts exports will create or preserve 6,000 jobs.

Steel

Following the lifting of the steel safeguard tariffs in December 2003, steel prices rose sharply. Between January 2004 and the peak in September 2004, the spot price for benchmark hot-rolled sheet more than doubled to \$756, reflecting record domestic demand, high raw material costs and supply constraints, and elevated shipping costs. Global steel prices also rose sharply because of strong demand worldwide, especially in China, and the decline in the value of the dollar. The result is the small profit margins of automotive parts suppliers were squeezed by steel prices. Since September 2004, domestic prices for key steel products have since eased because of a large inventory build and some softening of demand. For example, the spot price of hot-rolled sheet dropped by nearly 25 percent from September 2004 to March 2005.

Some steel consumers, including automotive parts suppliers, lobbied the Administration against the steel safeguard measures before they were terminated. To support its concerns about the adverse impact of high steel prices on members, Motor Equipment Manufacturers Association (MEMA) gathered data from 16 select automotive parts manufacturers to determine the impact of the "Section 201" steel tariffs on the U.S. auto parts industry. MEMA found a reported cost of \$121 million for the 16 manufacturers in 2002 directly attributable to higher steel prices in addition to a reported cumulative loss of \$12 million because of longer lead times and delivery problems with steel materials. The 16 manufacturers were

projected to incur \$213 million in additional cost in 2003 because of the increased steel prices.

MEMA highlighted three areas of concern to the supplier industry because of the steel tariffs. The first was the concern that the production of automotive parts and components, as well as cars and trucks, could be disrupted because of the allocation and rationing of domestic steel. The second was the steep and sudden increases in raw material costs that could not be passed forward to vehicle manufacturers. The third was the shift of customers' purchases from domestic to foreign sources of automotive parts and assembled component systems.¹⁶

To reduce the pressure on steel prices, steel producers and automotive parts suppliers in 2004 pressed the Administration to address other countries' export restraints on raw materials used in steelmaking and in changes to U.S. trade law. A coalition of steel customers and steel producers formed the Emergency Steel Scrap Coalition to address the high steel scrap costs and elevated steel prices. The Coalition considered filing a Section 301 petition aimed at removing export restraints on steel scrap from Russia and Ukraine. These restrictions were thought to be driving up world scrap prices and restraining scrap supply, as well as providing a *de facto* subsidy to Russian and Ukrainian steelmakers. On December 20, 2004, the Administration explained to the Coalition that it was not favorably disposed toward a Section 301 filing because export duties were maintained by many countries and were generally consistent with WTO rules. It was difficult to maintain that such measures burden U.S. commerce. Also, exports of scrap from Russia and Ukraine rose significantly and their combined volumes are likely to reach the same levels as 1998, before the duties were imposed.

In late 2003, China announced that it would decrease its export quota on coke for 2004. The coke export price soared, reflecting the reduced quota and high license fees. China has since increased the amount of coke that can be exported and expanded enforcement efforts to ban the practice of charging high fees for export licenses. As a result, export prices of Chinese coke have fallen sharply since April 2004 and U.S. imports nearly doubled in 2004.

The Detroit 3 and many Tier 1 suppliers would not allow their suppliers to pass along higher steel costs, despite threats from lower tier suppliers of bankruptcies or halting shipments. The automakers agreed to discuss ways to help suppliers absorb steel prices. Steel makers have put surcharges on metal users. The charges accounted for a 20-30 percent increase in just three months in early 2004. One prominent example of a supplier hurt by the steel prices was Internet Corp, a supplier of chassis, drivetrain and structural cast metal components. Internet was hard hit by steel prices and eventually the company filed for bankruptcy protection. Those hardest hit were Tier 2 steel machining companies, forging, casting, and stamping companies and many may face bankruptcy. Higher prices also affect the quality and delivery of product to systems integrators and automakers.

¹⁶ The Autoparts Report, 6/21/02.

A number of lower tier suppliers sent letters to Delphi, a tier 1 supplier, saying the companies would stop shipping steel parts if Delphi refused to pay for increasing steel costs. Initially, Delphi was awarded a temporary restraining order against companies to keep the supplies coming. MEMA reported that surcharges started out at around \$20-60 a ton depending on product type, but surcharges reached \$80-130 in three months from January-March 2004. Delphi eventually resolved its pricing dispute with some of the suppliers, resolving how the companies should deal with rising steel surcharges. However, other suppliers still had to resolve the issue with their customers.

Mergers, Acquisitions, and Bankruptcies

Competition in the automotive industry is keeping most suppliers' profit margins very thin. Although most suppliers remain profitable, their margins are so slim that disturbances in the economy like increased steel prices or energy prices are leaving many suppliers in financial trouble. Ever increasing competition, changing business models, and industry productivity gains are progressively adding to pressure for consolidation. Some industry analysts estimate that up to 90 percent of U.S. parts suppliers were acquired, merged, or left the business during the 1990s. Industry analysts speculate that, of nearly 800 major suppliers in 2000, fewer than 100 will be left by 2010 as a result of bankruptcies, mergers and acquisitions, and migration to other industries.¹⁷

Between 1995 and 2001 the industry's 23 largest publicly traded suppliers' consolidated industry sales rose from \$62 billion to \$112 billion.¹⁸ However this merger and acquisition boom left little trace of benefits to supplier operating margins and return on capital. Disappointing share returns and large debt have left many suppliers in need of affordable capital. Consequently, bankruptcies and distressed credits generated \$8 billion in losses to auto supplier lenders between 1999-2001.¹⁹ Debt levels among the top 23 suppliers tripled during the seven years - rising five times faster than the market value of the group's common stock. Many of these firms remain steeped in debt. This situation is not true for all automotive firms however. According to researchers for Accenture's Automotive Practice, several automotive parts firms have returns besting the Standard & Poor's 500 by a considerable margin and as a group they are doing better than the OEMs.²⁰ Thus, while there are a large number of firms in trouble, there also are several firms well placed to advance as those around them stumble and, as stated above, pressure for further consolidation remains.

¹⁷ Odyssey of the Auto Industry, presented before the SAE World Congress on March 8, 2004

¹⁸ Automotive News, 3/21/02.

¹⁹ Automotive News, 3/21/02.

²⁰ "Accenture Upbeat on Supplier Business," Ward's Automotive Reports, Vol. 79, No. 46, November 15, 2004, pg. 3

Rationalization efforts already underway, such as GM's parts-sharing plan, will dramatically reduce the number of industry participants. While GM shared components within a specific vehicle architecture in the past, under its parts sharing plan GM is working to share components among its different architectures in the future. In the words of Jim Queen, GM's Vice President for North America, "if we have six suppliers working with us today, as we continue to move to common parts, we may only need two globally in the future".²¹ Similarly according to Delphi's David Nelson, Vice President – Global Supply, Tier 1 supplier Delphi is going to cut its Tier 2 and Tier 3 suppliers from 4,000 to 1,000 over the next several years.²² Increasing price pressure from both Tier 1s and OEMs will drive consolidation at the Tier 2 and Tier 3 levels. Smaller suppliers face the largest shake-out in the coming years.

Nevertheless, the value of mergers and acquisitions in the automotive parts industry (SIC 3714- Motor Vehicle Parts) dropped 71.5 percent from \$7,529 million with 38 deals in 2003 to \$2,144 million with 27 deals in 2004, according to Automotive Aftermarket Industry Association (AAIA) (Table 13). This is a significant decline from 1999 when the number of deals was 57 worth \$15,893 million.²³ The decline is partially due to a continuing effort by parts suppliers to improve their balance sheets following the economic decline in 2001. Indeed, the economic decline in 2001 put a virtual freeze on merger and acquisitions. Instead there has been an increase in the number of bankruptcy filings. Bankruptcy filings are particularly acute in automotive parts sub-sectors with a large reliance on steel inputs. These companies are seeing major input costs rises yet they cannot pass those costs along due to the extremely tenuous position of their major buyers. Several major auto parts suppliers, including Tower Automotive, Citation and Internet, sought bankruptcy protection, citing the cost of steel as a primary reason.

In addition to being the ones most subject to consolidation, the smaller Tier 2 and 3s are also most exposed to bankruptcy. This is primarily true because they much are much more likely to be relying on single contracts or multiple contracts from only one of the Tier 1s or OEMs. Thus, they are much more exposed to cancellation of product lines. They are also more prone to bankruptcy than the larger Tier 1s because they have less leverage with their bankers. While smaller companies will often be turned down by their bankers when they exceed their credit lines, larger companies can "owe too much to fail."²⁴

The pressures driving industry consolidation remain. Former GM Chairman Jack Smith, now with Alix Partners, said that GM was grouping its parts makers into three categories: those who are functioning

²¹ GM Parts-Sharing Plan Will Cut Suppliers," Automotive News, October 11, 2004, pg. 3

²² "Delphi to Shed 3,000 Suppliers," Ward's Automotive Reports, Vol. 79, No. 37, September 13, 2004, pg. 2

²³ AAIA, Aftermarket Factbook 2002.

²⁴ "Little Guy Gets The Worst Beating," Automotive News, March 14, 2005, pg. 54

properly and can win additional contracts, those who have problems that can be fixed, and those who are not performing well enough to win new business.²⁵ Companies that sit on the sidelines risk being too small to compete or unattractive to potential suitors. For parts makers, further industry consolidation will be a key factor in their survival. The same pressure that is pushing industry consolidation is also forcing companies to divest weak or non-core operations. As evidence of this, industry publications reported that Visteon was shopping formerly “core” operations in an effort to raise cash and maintain its viability.²⁶

The difficult business position driving industry consolidation was highlighted by Dana’s sale of its aftermarket business to the Cypress Group. After the Cypress Group successfully won a competitive bidding process for Dana’s aftermarket assets - including the well known brands Raybesto brakes and Wix filters, the Cypress Group successfully renegotiated the purchase lopping off \$80 million from the initial purchase price. While neither company commented on the reason for the decline, industry press reported that the reason was profit pressure in the aftermarket parts sector and the aftermarket is experiencing much less pressure than the OE side of the industry.²⁷

The strong Euro should give European companies extra incentive to acquire U.S. industry assets, and it has led some European companies to make prominent purchases of U.S.-parts company assets in 2004. Among them were Valeo’s purchase of Johnson Control’s engines electronics unit and Siemens’s acquisition of Chrysler’s electronics plant in Huntsville, Alabama. Still, the decline in the Dollar versus the Euro has not led to a great increase in European purchases. The Europeans have apparently instead been using their increased purchasing clout to expand in emerging markets. The reasons, according to industry analysts, are high U.S. labor costs and the low growth potential of the North American automotive market. These two factors generally make the purchase of U.S. parts company assets less attractive than Eastern European and Asian ventures.²⁸

Business Model - OEM and Supplier Relations

Industry representatives and analysts have expressed concern about the current business model of the Detroit 3 and their relationship with suppliers. Many observers believe it is the primary driver behind disappointing Detroit 3 returns and generally low supplier industry returns. Essentially the Detroit 3 are utilizing the same supply model Henry Ford developed. The thrust of this system is a set of independent

²⁴ The Detroit News, September 30, 2003.

²⁶ “Visteon Mulls Sale of Businesses,” Automotive News, March 7, 2005, pg. 1

²⁷ “Dana Slashes the Price of Its Aftermarket Unit,” Automotive News, November 15, 2005, pg. 51

²⁸ “Labor Costs Slow Acquisitions of U.S. Suppliers,” Automotive News, June 14, 2005, pg. 6 and “Valeo’s Morin Hints at More Acquisitions,” Automotive News, February 21, 2005, pg. 16D

suppliers bidding on short-term contracts. The cost orientation of the assemblers in this process drives down the profit margins of the suppliers.

According to 2002 survey of 600 lower tier suppliers by Plante and Moran LLP consulting firm, 15 percent of the supply chain is in dire straits and unlikely to survive if the status quo is maintained. Only 20 percent of the lower tier suppliers are actually having success with the status quo, partly because they have the clout to resist price cuts. The study also found that 70 percent of the suppliers have positive cash flow, but are producing returns 25-40 percent below required thresholds over the long term.

While this system of arms length deals is highly effective at holding down costs for commodity items, it seems less effective at maintaining quality and innovation in the supply chain. In the words of Larry Denton, CEO of Dura Automotive Systems Inc., "There's something broke here. Innovation isn't getting through [to] the old domestics."²⁹ The Japanese model of long-term supplier relations appears to be more sustainable in this regard.

Industry analysts appear to agree that Japanese automakers are much more selective in whom they do business with and they evidently spend much more time working to preserve their supplier continuity. Thus, while the Detroit 3 will attempt to use auctions to cut prices, Japanese makers tend to work with their supplier to achieve cost reductions. "They work with you to arrive at a competitive price, and they are willing to pay because they want long-term partnering," said Earl Code, a vice president at Ernie Green Industries. "They want suppliers to make enough money to stay in business, grow and bring them innovation."³⁰

Attempting to address their suppliers' concerns, the U.S. vehicle assemblers, Ford and GM, say they are trying more collaborative approaches with suppliers. In the fall of 2002, Ford created Team Value Management to pursue this approach. GM is also working with a select group of suppliers in a more collaborative effort to develop plans to cut the cost of parts by 20 percent over three years. In a long-term approach, suppliers have proposed ideas that would allow them to earn credit for tomorrow's savings.

Nonetheless, a survey of 223 suppliers done in July of 2004 showed that the Detroit 3 are falling further behind their Japan-based competition in terms of supplier relations. Parts industry trust for the Detroit 3 has never been lower while industry trust for Japan-based assemblers has never been higher. Most telling, suppliers say they are only preserving current quality standards for the Detroit 3, while they are raising their parts quality for Japan-based assemblers.³¹

²⁹ Automotive News, February 10, 2003, Pgs. 17-18.

³⁰ Automotive News, February 10, 2003, Pgs. 17-18.

³¹ "Study: Big Three Relations With Suppliers at Rock Bottom," The Detroit News Autos Insider, Monday, August 2, 2004

According to industry consultant John Henke, Jr. the U.S. supplier industry reduced support and service in 2004 for their Detroit 3 clients in response to their continued price cut demands.³² U.S. auto parts suppliers are being urged by investors and industry consultants to turn to foreign automakers for business.³³ As Japanese and European automakers have gained U.S. market share -- reducing the Detroit 3 share from 72.1 percent in 1992 to 58.7 percent in 2004 -- U.S. automotive parts suppliers have been actively seeking their business. Unfortunately, with long established ties to their base-nation suppliers, this strategy cannot be expected to have dramatically positive impacts for the U.S. supply base overall. In fact despite the ongoing effort of U.S. parts suppliers to increase their sales to them, it seems Japan-based assemblers are actually cutting back on U.S. parts purchases as a percentage of production.

Consulting firm, A.T. Kearney Inc. surveyed 85 North American automotive industry executives. The firm concluded that one way the Detroit 3 can work to improve their relations is to work with suppliers during vehicle design. Kearney says the Detroit 3 should then reward suppliers for their innovations. Currently, according to Dan Oxyer, Vice President of Kearney's North American automotive practice, "several of the OEMs have told me engineering has agreed to a specific price with the supplier... They both walk away feeling pretty good about achieving that target price. But when it moves to the purchasing negotiations, a new price is then introduced, which then drives this mistrust."³⁴

In addition to their attempts to improve their supplier relations, the Detroit 3 have been examining supplier park systems. The appeal of supplier parks is that it puts parts suppliers in or next to assembly plants, significantly shortening the response time of suppliers, shortening lead time, saving money on shipping parts, and lessening the chance of disruptions. Ford has the first North American automotive supplier park under development in the Chicago area with 10 Tier 1 suppliers within half a mile of the assembly plant.

For suppliers that produce complex modules and require just-in-time delivery, there are potential benefits to being located in a supplier park. For other suppliers, however, it makes little sense to spend money on building a plant for just one customer to turn out parts that are easy to ship. Suppliers will need to consider the costs and benefits of being part of a supplier park to service just one customer.

Suppliers can expect to face continued requests for cost reductions from vehicle assemblers and Tier 1 suppliers. A recent study by the Roland Berger consulting firm suggested that suppliers should choose one of three business models - *system integrators*, *technology satellites*, or *process satellites*.

32 "Toyota Aims to Satisfy Its Suppliers," *Automotive News*, February 21, 2005, pg. 10

33 "North American Suppliers Are Urged to Take Action To Secure A Share Of Asian Auto Growth in The U.S.," *The Autoparts Report*, Vol. XVII, No. 15 & 16, July 16, 2004, pg. 1

34 "Study: Suppliers, Automakers Must Consult Early," *Automotive News*, August 30, 2004, pg. 20

System integrators, focusing on program management and cost control, add value to subsystems for other suppliers. Technology satellites develop unique technologies, relying heavily on research & development and strong engineering staff. Process satellites develop better processes for low cost, high-volume manufacture of commodities and may outsource manufacturing of the commodities. Some suppliers are willingly taking on new responsibilities offered to them, transforming themselves into “Tier One-Half systems integrators,” that engineer and build complete modules and assume both product design and development responsibilities and down stream supply chain management functions. Others are consciously declining, deciding there is more profitability and less risk to be had by remaining in the lower tiers.

The industry has been making attempts at collaboration through the Automotive Industry Action Group (AIAG) and the Society of Automotive Engineers (SAE). Industry executives offered logistics as a good example of over-competition. Originally the Detroit 3 each did logistics and did it efficiently. Then they got out of logistics and gave the Tier 1 suppliers the responsibility of managing the supply chain. Each Tier 1 now has to add a logistics function, which adds a cost. Some industry executives don't believe that the Detroit 3 should manage the supply chain, suggesting a consortium of suppliers, OEMs, and others to concentrate on the commonization of standards for process and procedures that interrelate the chain as a unit. Other industry representatives aren't sure that a consortium is the answer, but do see a lot of waste in the current model and believe that there should be some discussion of the problems.

Suppliers who choose not to pursue a new role and remain in less demanding tiers may increasingly find themselves in more competitive environment of highly cost sensitive, commodity products, especially if they are unable to differentiate their products. OESA estimates that there were 30,000 automotive suppliers in North America in 1990, but just 10,000 in 2000. By 2010, their numbers may be no more than 4,000.³⁵

Investment and innovation are the keys to a bright future for our manufacturing system. At a series of roundtables organized by the U.S. Department of Commerce across the country, U.S. manufacturers urged government to help: create the conditions for economic growth and manufacturing investment; promote open markets and a level playing field; lower the regulatory cost of manufacturing in the United States; enhance government's focus on manufacturing competitiveness; strengthen education, retraining, and economic diversification; and invest in innovation. The input from these meetings was compiled into a Manufacturing Report that contained a plan to accomplish initiatives by reducing the cost and complexity of the tax code, making tax relief permanent, and lowering health care, regulatory, energy and legal costs. It established an Office of Industry Analysis to assess the cost competitiveness of U.S. industry and the impact of proposed rules and regulations on U.S. manufacturers, and created a new Assistant Secretary of Manufacturing to ensure a permanent advocate for the men and women in America's factories. And, to promote the sale of American products in global markets, a global supply

³⁵ #Odyssey of the Auto Industry, presented before the SAE World Congress, March 8, 2004.

chain initiative will be implemented to promote global use of U.S. technical standards, modernize export control laws, and consolidate export promotion functions.

[For more, see < www.manufacturing.gov >.]

E-Commerce

Forrester Research Inc reported that U.S. automakers' information technology spending is 1-2 percent of revenue, compared to 3.6 percent for other manufacturers and 5.4 percent for all industries.

One early automotive information technology creation was Covisint. Covisint, formed by GM, Ford, DaimlerChrysler, Nissan, and Renault in 2000, was supposed to become the supplier portal for the automotive industry. By linking parts suppliers to vehicle manufacturers it would transform the industry.

However, when the internet bubble burst in 2002, prospects and expectations for Covisint began to dim. The major supply-chain portal had difficulty in trying to live up to expectations. The technology, culture, and acceptance were not there. With only limited success with reverse auctions, in early 2004, Covisint was on the auction block itself. It had sold its online auction service and had shut down its electronic parts catalog in 2003. The only remaining business was primarily a new electronic transmission service for vehicle manufacturers. Covisint's creators and equity partners sold their equity stakes to Compuware Corp., a software and technology service firm in Detroit, in February 2004.

SupplyOn, an electronic marketplace owned by some of Germany's largest automotive parts suppliers, including Robert Bosch, Siemens, and Continental, was established in 2000. It recently announced plans to fill the void left by Covisint's departure, offering improved transaction speed, cost savings and better communications through the use of the electronic marketplace concept. SupplyOn believes it can succeed in the United States because it was created by suppliers for suppliers. However, some U.S. industry analysts do not agree. Competition in the United States is well-entrenched, suppliers have been developing their own web-based tools, and suppliers are going from a centralized marketplace to private marketplaces.

Conclusions

The U.S. automotive parts industry can expect a difficult year in 2005 because economic strains of steel prices, price and cost cut demands from U.S. automakers, and increased competition from foreign suppliers. The anticipated bolstering of production because the introduction of many new, locally assembled models of vehicles has not occurred for vehicle makers or auto parts suppliers. The industry should also expect that the "Detroit 3" to continue to demand price or cost cuts as they continue their efforts to regain lost market share. The industry can expect more departures and consolidations of suppliers as profit margins are squeezed. Automakers and suppliers will experiment with innovative and alternate business models to reduce financial pressure.

Appendix 1

Office of Automotive Affairs Automotive Parts Product Listings Revised 11.03.04

To facilitate the analysis of trade data for automotive parts on a market-based model, the Office of Automotive Affairs (OAA) has created six product groupings from the available, individual 10-digit product codes. The core of the codes are contained in Chapter 87, Vehicles Other Than Railway or Tramway Rolling-Stock, and Parts and Accessories Thereof of the internationally-agreed Harmonized Tariff System (HTS). We list these groups and their codes below. Some codes are not valid for current years, but are included to assure that data for products so coded for previous years are retrieved from the data base and assigned to the appropriate OAA group.

The OAA groups are not official product subcategories, and are not listed in the Harmonized Tariff System nomenclature published by the U.S. International Trade Commission (USITC) for coding imports (Internet address: <http://www.usitc.gov/taffairs.htm>), nor in the parallel Schedule B published by the U.S. Census Bureau for coding exports (<http://www.census.gov/foreign-trade/schedules/b/2001/sb87.htm>). The OAA attempts to closely approximate the core automotive industry by excluding certain items for example, parts explicitly listed for motorcycles, golf-carts, snowmobiles, agricultural equipment, etc.

Readers should realize that OAA is not the only, nor the official U.S. government source for trade data on the auto industry, nor are we able to produce custom data runs for the public. Persons seeking data for individual or different product codes are welcome to utilize at no charge the data retrieval system operated by the USITC to access the federal government's official trade data base. Please note, some of the data on the trade data base may be restricted from the public. The ITC's retrieval system, *Trade DataWeb*, can be accessed at <http://dataweb.usitc.gov/scripts/user_set.asp>.

HTS Codes by Product Group

HTS Codes for U.S. Imports of:

Bodies and Parts

7007110000	Safety Glass
7007110010	Safety Glass
7007211000	Windshields
7007211010	Windshields
7007215000	Safety Glass
7009100000	Rear-View Mirrors
8301200000	Locks
8301200060	Other Locks
8302103000	Hinges
8302303000	Other Mountings

HTS Codes for U.S. Exports of:

Bodies and Parts

7007110000	Safety Glass
7007211000	Windshields
7007215000	Safety Glass
7009100000	Rear-View Mirrors
8301200000	Locks
8302103000	Hinges
8302300000	Other Mountings
8707100020	Bodies
8707100040	Bodies
8707905020	Bodies

8302303010	Pneumatic Cylinders	8707905040	Bodies
8302303060	Other Mountings	8707905060	Bodies
8302306000	Other Mountings	8707905080	Bodies
8707100020	Bodies	8708100010	Stampings of Bumpers
8707100040	Bodies	8708100050	Bumpers and Parts
8707905020	Bodies	8708210000	Seat Belts
8707905040	Bodies	8708290010	Stampings of Bodies
8707905060	Bodies	8708290025	Truck Caps
8707905080	Bodies	8708290050	Parts & Access. of Bodies
8708100010	Stampings of Bumpers	8708290060	Parts & Access. of Bodies
8708100050	Bumpers and Parts	8708295025	Truck Caps
8708103010	Stampings of Bumpers	8708295070	Other Pts. & Access. Bodies
8708103050	Bumpers	8708990045	Slide-in Campers
8708106010	Stampings Parts of Bumpers	8708998030	Slide-in Campers
8708106050	Parts of Bumpers	9401200000	Seats
8708210000	Seat Belts	9401901000	Seat Parts
8708290010	Stampings of Bodies	9401901010	Seat Parts of Leather
8708290025	Truck Caps	9401901080	Seat Parts
8708290050	Parts & Access. of Bodies	9403901000	Parts of Furnitures
8708290060	Parts & Access. of Bodies		
8708291500	Door Assemblies		
8708292000	Body Stampings		
8708295010	Stampings		
8708295025	Truck Caps		
8708295060	Other Parts		
8708995045	Slide in Campers		
8708996100	Airbags		
9401200000	Seats		
9401200010	Child Safety Seats		
9401200090	Seats		
9401901000	Seat Parts		
9401901010	Seat Parts of Leather		
9401901020	Seat Parts of Textile		
9401901080	Seat Parts		
9401901085	Seat Parts		
9403406000	Wooden Furniture for M.V.		
9403506000	Wooden Furniture for M.V.		
9403901000	Furniture?		
9403901040	Parts of Furniture for M.V.		
9403901050	Parts of Furniture for M.V.		
9403901080	Parts of Furniture for M.V.		
9403901085	Parts of Furniture for M.V.		

Chassis and Drivetrain Parts

4009120020	Brake Hoses
4009220020	Brake Hoses
4009320020	Brake Hoses
4009420020	Brake Hoses
4009500020	Brake Hoses
6813100050	Brake Linings & Pads
6813900050	Friction Materials
7318160010	Lugnuts
7318160015	Lugnuts
7318160030	Lugnuts
7318160045	Other Lugnuts
7320100015	Leaf Springs
7320103000	Leaf Springs
7320106015	Leaf Springs
7320106060	Leaf Springs
7320201000	Helical Springs
8421394000	Catalytic Converters
8482101000	Ball Bearings
8482101040	Ball Bearings
8482101080	Ball Bearings
8482105044	Radial Bearings
8482105048	Radial Bearings
8482200010	Tapered Roller Bearings
8482200020	Tapered Roller Bearings
8482200030	Tapered Roller Bearings
8482200040	Tapered Roller Bearings
8482200050	Tapered Roller Bearings
8482200060	Tapered Roller Bearings
8482200070	Tapered Roller Bearings
8482200080	Tapered Roller Bearings
8482400000	Needle Roller Bearings
8482500000	Other Cylindrical Bearings
8708315000	Mounted Brake Linings
8708395010	Brake Drums & Rotors
8708395020	Brake Drums
8708395030	Brake Rotors
8708395050	Brakes & Servo-Brakes
8708401000	Gear Boxes
8708402000	Gear Boxes
8708405000	Gear Boxes
8708503000	Drive Axles
8708505000	Drive Axles

Chassis and Drivetrain Parts

4009120020	Brake Hoses
4009220020	Brake Hoses
4009320020	Brake Hoses
4009420020	Brake Hoses
4009500020	Brake Hoses
6813100000	Brake Linings & Pads
6813900000	Other Friction Materials
7320100000	Leaf Springs
7320201000	Helical Springs
8421394000	Catalytic Converters
8482101000	Ball Bearings
8482105044	Radial Bearings
8482105048	Radial Bearings
8482200020	Tapered Roller Bearings
8482200030	Tapered Roller Bearings
8482200040	Tapered Roller Bearings
8482200060	Tapered Roller Bearings
8482200070	Tapered Roller Bearings
8482200080	Tapered Roller Bearings
8482400000	Needle Roller Bearings
8482500000	Other Cylindrical Bearings
8708310000	Mounted Brake Linings
8708390000	Other Brakes
8708401000	Gear Boxes
8708402000	Gear Boxes
8708406000	Gear Boxes
8708500050	Drive Axles
8708600050	Non-Driving Axles
8708700050	Road Wheels & Pts.
8708805000	Suspension Shock Absorbers
8708925000	Radiators
8708935000	Clutches and Parts
8708945000	Steering Wheel, Column
8708990070	Wheel Hub Units
8708995800	Wheel Hub Units
8708996100	Airbags
8708998015	Wheel Hub Units

8708508000	Drive Axles
8708605000	Non-Driving Axles
8708608010	Spindles
8708608050	Non-Driving Axles
8708704530	Road Wheels
8708704545	Road Wheels
8708704560	Wheel Rims
8708706030	Wheel Covers
8708706045	Wheel Covers & Hubcaps
8708708010	Wheels
8708708015	Wheels
8708708025	Wheels
8708708030	Wheels
8708708035	Wheels
8708708045	Wheel Rims
8708708050	Parts & Access. for Wheels
8708708060	Wheel Covers & Hubcaps
8708708075	Parts & Access. for Wheels
8708803000	Suspension Shock Absorbers
8708804500	Suspension Shock Absorbers
8708805000	Suspension Shock Absorbers
8708925000	Radiators
8708935000	Clutches & Parts
8708936000	Clutches
8708937500	Parts of Clutches
8708945000	Steering Wheels, Columns
8708995010	Steering Shaft Assemblies
8708995020	Wheel Hub Units
8718995025	Wheel Hub Units
8708995030	Beam Hanger Brackets
8708995800	Wheel Hub Units
8708996400	Half Shafts & Drive Shafts
8708996700	Parts (joints?)
8708996710	Universal Joints-Ø1
8708996720	Universal Joints- Ø1
8708996790	Other Joints-Ø1
8708997030	Beam Hanger Brackets
8708997060	Suspension System Parts
8708997330	Steering Shaft Assemblies
8708997360	Parts for Steering Systems
8708998015	Wheel Hub Units
8716905010	Axles & Parts for Trailers
8716905030	Wheels for Trailers

Electrical and Electric Components

8414308030	Compressors
8414596040	Fans
8414598040	Fans & Blowers
8415200000	Air Conditioners
8415830040	Air Conditioners
8415900040	Parts of Air Conditioners
8415908040	Parts of Air Conditioners
8415908045	Parts of Air Conditioners
8501324500	Electric Motors
8507100060	Storage Batteries
8507304000	Nickel-Cadmium Batteries
8507904000	Parts for Lead Acid Batteries
8511100000	Spark Plugs
8511200000	Magnetos, Dynamos
8511300040	Distributors
8511300080	Ignition Coils
8511400000	Starter Motors
8511500000	Generators
8511802000	Voltage Regulators
8511806000	Other Engine Ignition Equip.
8511902000	Parts for Voltage Regulators
8511906020	Parts for Distributer Sets
8511906040	Other Parts Engine Ignition
8512202000	Lighting Equipment
8512202040	Lighting Equipment
8512204000	Signaling Equipment
8512204040	Signaling Equipment
8512300020	Horns
8512300030	Radar Dectectors
8512300040	Sound Signaling Equipment
8512402000	Defrosters
8512404000	Windshield Wipers
8512902000	Parts of Signaling Equipment
8512906000	Lighting Equipment Parts
8512907000	Parts of Defrosters
8512909000	Parts of Windshield Wipers
8519910020	Cassette Tape Players
8519911000	Cassette Tape Players
8519934000	Cassette Tape Players
8525201500	Radio Transceivers
8525206020	Radio Telephones
8525209020	Radio Telephones

Electrical and Electric Components

8414308030	Compressors
8414596040	Fans
8414598040	Fans & Blowers
8415200000	Air Conditioners
8415830040	Air Conditioners
8507100050?	Storage Batteries
8507100060	Storage Batteries
8507904000	Parts for Lead Acid Batteries
8507904050?	Parts for Batteries?
8511100000	Spark Plugs
8511200000	Magnetos, Dynamos
8511300040	Distributors
8511300080	Ignition Coils
8511400000	Starter Motors
8511500000	Generators
8511802000	Voltage Regulators
8511806000	Other Engine Ignition Equip.
8511906020	Parts for Distributor Sets
8511908000	Other Elec Ignition Equip
8512202000	Lighting Equipment
8512204000	Signaling Equipment
8512300000	Sound Signaling Equip
8512300030	Radar Dectectors
8512300050	Sound Signaling Equip
8512402000	Defrosters
8512404000	Windshield Wipers
8512902000	Parts of Signaling Equip.
8512905000	Parts of Lighting Equip.
8512908000	Other Pts of Elec. Equip.
8525201000	CB Transmission Apparatus
8525206000	Other Transmission Apparatus
8525209020	Radio Telephones
8525209050?	Radio Telephones?
8527210000	Radiobroadcast Receivers
8527290000	Other Radiobroadcast Receiv
8531800038	Radar Detectors
8531809038	Radar Detectors
8536410005	Signaling Flashers
8539100020	Beam Lamp Units
8539100040	Beam Lamp Units
8544300000	Ignition Wiring Sets
9029100000	Revolution Counters

8527211005	Radio-Tape Players (CDs)
8527211010	Radio-Tape Players
8527211015	Radio-Tape Players
8527211020	Radio-Tape Players
8527211030	Radio-Tape Players
8527214000	Radio-Combinations
8527214040	Radio-Combinations
8527214800	Radio-Combinations
8527290020	Radio-Receivers AM
8527290040	Radio-Receivers FM/AM
8527290060	Radio-Receivers
8527294000	Radio-Receivers FM/AM
8527298020	Radio-Receivers AM
8527298060	Radio-Receivers
8531800038	Radar Detectors
8531808038	Radar Detectors
8531809038	Radar Detectors
8536410005	Signaling Flashers
8539100010	Beam Lamp Units
8539100020	Beam Lamps
8539100040	Beam Lamps
8539100050	Beam Lamp Units
8539212040	Halogen Lamps
8544300000	Ignition Wiring Sets
8708291000	Inflators & Modules Airbags
9029104000	Taximeters
9029108000	Revolution Counters, Odom.
9029204080	Other Speedometers, Tach.
9029902000	Parts & Access of Taximeters
9029908040	Parts & Access of Speed/Tac
9029908080	Parts & Access of Odometers
9104002510	MVT & Cases Panel Clock
9104004000	Instrument Panel Clocks
9104004510	Movements of Inst. Clock

9029205000	Other Speedometers/Tacho
9029900000	Pts & Access of Rev Counter
9104000000	Inst Panel Clocks

Engines and Parts

4010101020	Belts
4016931010	O-Rings
4016931020	Oil Seals
4016931050	Gaskets
4016931090	Gaskets
8407341400	Engines
8407341540	Engines
8407341580	Engines

Engines and Parts

8407342000	SP-IG Piston Engine
8407342030	SP-IG Engine
8407342090	Other Engine
8408202000	Compression Ignition Engine
8409914000	Pts for Engines
8409994000	Other Pts for Engines
8413301000	Fuel Injection Pumps
8413309000	Fuel, Lub., Cooling Pumps

8407341800	Engines	8413911000	Parts of Fuel Injection Pumps
8407342040	Engines	8414308030	Compressor/Air Conditioners
8407342080	Engines	8414593000	Turbochargers
8407344400	Engines	8421230000	Oil or Fuel Filters
8407344540	Engines	8421310000	Intake Air Filters
8407344580	Engines	8483101020	Transmission Shafts
8407344800	Engines	8483103010	Camshafts & Crankshafts
8408202000	Compression Ignition Engine		
8409911040	Cast Iron Parts		
8409913000	Aluminum Cylinder Heads		
8409915010	Connecting Rods		
8409915080	Parts		
8409919110	Connecting Rods		
8409919190	Parts		
8409919910	Connecting Rods		
8409991040	Cast-Iron parts		
8409999110	Connecting Rods		
8409999190	Parts		
8413301000	Fuel Injection Pumps		
8413309000	Fuel, Lub., or Cooling Pumps		
8413309030	Fuel Pumps		
8413309060	Lubricating Pumps		
8413309090	Cooling Medium Pumps		
8413911000	Parts of Fuel Injection Pumps		
8414593000	Turbochargers		
8421230000	Oil or Fuel Filters		
8421310000	Intake Air Filters		
8483101030	Camshafts and Crankshafts		
8483103010	Camshafts and Crankshafts		
9802004020	Combust. Engine Repair		
9802005030	Value of Repairs on Engines		

Miscellaneous Parts

3819000000	Brake Fluid
3819000010	Brake Fluid
3819000090	Other Liquids
3820000000	Anti-Freeze
4016993000	Vibration Control
4016995010	Mechanical Articles
4016995500	Vibration Control
4016996010	Mechanical Articles
8301200030	Steering Wheel Immobilizers
8425490000	Jacks
8426910000	Lifting Machinery

Miscellaneous Parts

3819000000	Brake Fluid
3820000000	Anti-Freeze
4016995010	Mechanical Articles
8425490000	Jacks
8426910000	Lifting Machinery
8431100090	Parts of Winches, Jacks
8708915000	Radiators
8708990050	Pts & Access
8708990090	Other Pts & Access
8708990095	Pts & Access
8708998075	Other Pts & Access

8431100090	Parts of Winches, Jacks
8708706060	Parts & Access. for Wheels
8708915000	Radiators
8708993000	Cast Iron Parts
8708995005	Brake Hoses
8708995060	Radiator Cores
8708995070	Cable Traction Devices
8708995080	Parts
8708995085	Parts
8708995090	Parts
8708995200	Cast Iron Parts
8708995500	Vibration Control Goods
8708998005	Brake Hoses of Plastics
8708998045	Radiator Cores
8708998060	Cable Traction Devices
8708998080	Parts
8716905050	Parts for Trailers
8716905060	Parts for Trailers

8716900000	Parts of Trailers
8716905000	Parts

Automotive Tires and Tubes

4011100010	Radial Tires for M.V.
4011100050	Pneumatic Tires for M.V.
4011101000	Radial Tires for M.V.
4011101010	Radial Tires->01
4011101020	Radial Tires->01
4011101030	Radial Tires->01
4011101040	Radial Tires->01
4011101050	Radial Tires->01
4011101060	Radial Tires->01
4011101070	Radial Tires->01
4011105000	Pneumatic Tires for M.V.
4011200005	Radial Tires for Lt. Trucks
4011200010	Pneumatic Tires for Lt. Truck
4011200015	Radial Tires for Buses/Truck
4011200020	Pneumatic Tires for Buses/Tr
4011200025	Radial Tires for Buses off
4011200030	Pneumatic Tires for Buses off
4011200035	Radial Tires for Buses off
4011200050	Pneumatic Tires for Buses off
4011201005	Radial Tires for Lt. Trucks
4011201015	Pneumatic Tires for Buses/Tr
4011201025	Radial Tires for Buses off
4011201035	Pneumatic Tires for Buses off
4011205010	Tires, ex. Radial for Lt. Truc

Automotive Tires and Tubes

4011100010	Radial Tires for M.V.
4011100050	Pneumatic Tires for M.V.
4011101000	Radial Tires for M.V.
4011105000	Pneumatic Tires for M.V.
4011200005	Radial Tires for Lt. Trucks
4011200010	Pneumatic Tires for Lt. Truck
4011200015	Radial Tires for Buses/Truck
4011200020	Pneumatic Tires for Buses/Tr
4011200025	Radial Tires for Buses off
4011200030	Pneumatic Tires for Buses off
4011200035	Radial Tires for Buses off
4011200050	Pneumatic Tires for Buses off
4011201005	Radial Tires for Lt. Trucks
4011201015	Pneumatic Tires for Buses/Tr
4011201025	Radial Tires for Buses off
4011201035	Pneumatic Tires for Buses off
4011205010	Tires, ex Radial, for Lt. Truc
4011205020	Pneumatic Tires for Buses
4011205030	Tires, ex Radial for Bus/Tr
4011205050	Pneumatic Tire for Bus/Tr
4012105020	Retreaded Tires Bus/Truck
4012106000	Other Retreaded Tires
4012110000	Retreaded Tires
4012120000	Retreaded Tires

4011205020	Pneumatic Tires for Buses	4012190000	Retread Tires
4011205030	Tires, ex. Radial, for Bus	4012200000	Used Pneumatic Tires
4011205050	Pneumatic Tires for Bus	4013100010	Inner Tubes
4012104005	Retreaded Tires for M.V.	4013100020	Inner Tubes
4012104015	Retreaded Tires for Light on	4013900000	Other Inner Tubes
4012104025	Retreaded Tires for Bus/Truc		
4012104035	Retreaded Tires for Bus/Truc		
4012105005	Retreaded Radial Tires M.V.		
4012105009	Retreaded Tires for M.V.		
4012105015	Retreaded Radial Tires Bus		
4012105019	Retreaded Tires for Lt. Truck		
4012105025	Retreaded Radial Tires Bus		
4012105029	Retreaded Tires for Bus/Truc		
4012105035	Retreaded Radial Tires Bus		
4012105050	Retreaded Tires for Bus/Truc		
4012108009	Retreaded Tires for M.V.		
4012108019	Retreaded Tires for Lt. Truck		
4012108029	Retreaded Tires for Bus/Truc		
4012108050	Retreaded Tires for Bus, ex.		
4012114000	Retreaded Tires for Cars		
4012118000	Retreaded Tires for Cars		
4012124015	Retreaded Tires for Lt. Truck		
4012124025	Retreaded Tires for Bus/Truc		
4012124035	Retreaded Tires for Bus/Truc		
4012128019	Retread Tire for Lt. Truck		
4012128029	Retread Tire for Bus/Truck		
4012128050	Retread Tire for Bus		
4012194000	Retreaded Tires for Bus, ex.		
4012198000	Retread Tire for Bus		
4012205000	Used Pneumatic Tires		
4012206000	Used Pneumatic Tires		
4013100010	Inner Tubes		
4013100020	Inner Tubes		



HTS Codes Numerically Ordered

HTS Codes for Import	
3819000000	Brake Fluid
3819000010	Brake Fluid
3819000090	Other Liquids
3820000000	Anti-Freeze
4009120020	Brake Hoses
4009220020	Brake Hoses
4009320020	Brake Hoses
4009420020	Brake Hoses
4009500020	Brake Hoses
4010101020	Belts
4011100010	Radial Tires for M.V.
4011100050	Pneumatic Tires for M.V.
4011101000	Radial Tires for M.V.
4011101010	Radial Tires->01
4011101020	Radial Tires->01
4011101030	Radial Tires->01
4011101040	Radial Tires->01
4011101050	Radial Tires->01
4011101060	Radial Tires->01
4011101070	Radial Tires->01
4011105000	Pneumatic Tires for M.V.
4011200005	Radial Tires for Lt. Trucks
4011200010	Pneumatic Tires for Lt. Truck
4011200015	Radial Tires for Buses/Truck
4011200020	Pneumatic Tires for Buses/Tr
4011200025	Radial Tires for Buses off
4011200030	Pneumatic Tires for Buses off
4011200035	Radial Tires for Buses off
4011200050	Pneumatic Tires for Buses off
4011201005	Radial Tires for Lt. Trucks
4011201015	Pneumatic Tires for Buses/Tr
4011201025	Radial Tires for Buses off
4011201035	Pneumatic Tires for Buses off
4011205010	Tires, ex. Radial for Lt. Truc
4011205020	Pneumatic Tires for Buses
4011205030	Tires, ex. Radial, for Bus
4011205050	Pneumatic Tires for Bus
4012104005	Retreaded Tires for M.V.
4012104015	Retreaded Tires for Light on

Schedule B Codes for Export	
3819000000	Brake Fluid
3820000000	Anti-Freeze
4009120020	Brake Hoses
4009220020	Brake Hoses
4009320020	Brake Hoses
4009420020	Brake Hoses
4009500020	Brake Hoses
4011100010	Radial Tires for M.V.
4011100050	Pneumatic Tires for M.V.
4011101000	Radial Tires for M.V.
4011105000	Pneumatic Tires for M.V.
4011200005	Radial Tires for Lt. Trucks
4011200010	Pneumatic Tires for Lt. Truck
4011200015	Radial Tires for Buses/Truck
4011200020	Pneumatic Tires for Buses/Tr
4011200025	Radial Tires for Buses off
4011200030	Pneumatic Tires for Buses off
4011200035	Radial Tires for Buses off
4011200050	Pneumatic Tires for Buses off
4011201005	Radial Tires for Lt. Trucks
4011201015	Pneumatic Tires for Buses/Tr
4011201025	Radial Tires for Buses off
4011201035	Pneumatic Tires for Buses off
4011205010	Tires, ex Radial, for Lt. Truc
4011205020	Pneumatic Tires for Buses
4011205030	Tires, ex Radial for Bus/Tr
4011205050	Pneumatic Tire for Bus/Tr
4012105020	Retreaded Tires Bus/Trucks
4012106000	Other Retreaded Tires
4012110000	Retreaded Tires
4012120000	Retreaded Tires
4012190000	Retread Tires
4012200000	Used Pneumatic Tires
4013100010	Inner Tubes
4013100020	Inner Tubes
4013900000	Other Inner Tubes
4016995010	Mechanical Articles
6813100000	Brake Linings & Pads
6813900000	Other Friction Materials

4012104025	Retreaded Tires for Bus/Truc	7007110000	Safety Glass
4012104035	Retreaded Tires for Bus/Truc	7007211000	Windshields
4012105005	Retreaded Radial Tires M.V.	7007215000	Safety Glass
4012105009	Retreaded Tires for M.V.	7009100000	Rear- View Mirrors
4012105015	Retreaded Radial Tires Bus	7320100000	Leaf Springs
4012105019	Retreaded Tires for Lt. Truck	7320201000	Helical Springs
4012105025	Retreaded Radial Tires Bus	8301200000	Locks
4012105029	Retreaded Tires for Bus/Truc	8302103000	Hinges
4012105035	Retreaded Radial Tires Bus	8302300000	Other Mountings
4012105050	Retreaded Tires for Bus/Truc	8407342000	Spark Ig Piston Engines
4012108009	Retreaded Tires for M.V.	8407342030	Spark Ig Engine
4012108019	Retreaded Tires for Lt. Truck	8407342090	Other Engine
4012108029	Retreaded Tires for Bus/Truc	8408202000	Compression Ignition Engine
4012108050	Retreaded Tires for Bus, ex.	8409914000	Pts for Engines
4012114000	Retreaded Tires for Cars	8409994000	Other Pts for Engines
4012118000	Retreaded Tires for Cars	8413301000	Fuel Injection Pumps
4012124015	Retreaded Tires for Lt. Truck	8413309000	Fuel, Lub., Cooling Pumps
4012124025	Retreaded Tires for Bus/Truc	8413911000	Parts of Fuel Injection Pumps
4012124035	Retreaded Tires for Bus/Truc	8414308030	Compressors/Air Condition
4012128019	Retread Tire for Lt. Truck	8414593000	Turbochargers
4012128029	Retread Tire for Bus/Truck	8414596040	Fans
4012128050	Retread Tire for Bus	8414598040	Fans & Blowers
4012194000	Retreaded Tires for Bus, ex.	8415200000	Air Conditioners
4012198000	Retread Tire for Bus	8415830040	Air Conditioners
4012205000	Used Pneumatic Tires	8421230000	Oil or Fuel Filters
4012206000	Used Pneumatic Tires	8421310000	Intake Air Filters
4013100010	Inner Tubes	8421394000	Catalytic Converters
4013100020	Inner Tubes	8425490000	Jacks
4016931010	O-Rings	8426910000	Lifting Machinery
4016931020	Oil Seals	8431100090	Parts of Winches, Jacks
4016931050	Gaskets	8482101000	Ball Bearings
4016931090	Gaskets	8482105044	Radial Bearings
4016993000	Vibration Control	8482105048	Radial Bearings
4016995010	Mechanical Articles	8482200020	Tapered Roller Bearings
4016995500	Vibration Control	8482200030	Tapered Roller Bearings
4016996010	Mechanical Articles	8482200040	Tapered Roller Bearings
6813100050	Brake Linings & Pads	8482200060	Tapered Roller Bearings
6813900050	Friction Materials	8482200070	Tapered Roller Bearings
7007110000	Safety Glass	8482200080	Tapered Roller Bearings
7007110010	Safety Glass	8482400000	Needle Roller Bearings
7007211000	Windshields	8482500000	Other Cylindrical Bearings
7007211010	Windshields	8483101020	Transmission Shafts
7007215000	Safety Glass	8483103010	Camshafts & Crankshafts
7009100000	Rear-View Mirrors	8507100050	Storage Batteries
7318160010	Lugnuts	8507100060	Storage Batteries

7318160015	Lugnuts	8507904000	Parts for Lead Acid Batteries
7318160030	Lugnuts	8507904050	Parts for Batteries
7318160045	Other Lugnuts	8511100000	Spark Plugs
7320100015	Leaf Springs	8511200000	Magnetos, Dynamos
7320103000	Leaf Springs	8511300040	Distributors
7320106015	Leaf Springs	8511300080	Ignition Coils
7320106060	Leaf Springs	8511400000	Starter Motors
7320201000	Helical Springs	8511500000	Generators
8301200000	Locks	8511802000	Voltage Regulators
8301200030	Steering Wheel Immobilizers	8511806000	Other Engine Ignition Equip.
8301200060	Other Locks	8511906020	Parts for Distributor Sets
8302103000	Hinges	8511908000	Other Elec Ignition Equip
8302303000	Other Mountings	8512202000	Lighting Equipment
8302303010	Pneumatic Cylinders	8512204000	Signaling Equipment
8302303060	Other Mountings	8512300000	Sound Signaling Equipment
8302306000	Other Mountings	8512300030	Radar Detectors
8407341400	Engines	8512300050	Sound Signaling Equipment
8407341540	Engines	8512402000	Defrosters
8407341580	Engines	8512404000	Windshield Wipers
8407341800	Engines	8512902000	Parts of Signaling Equip.
8407342040	Engines	8512905000	Parts of Lighting Equipment
8407342080	Engines	8512908000	Other Pts of Elec Equipment
8407344400	Engines	8525201000	CB Transmission Apparatus
8407344540	Engines	8525206000	Other Transmission Apparatus
8407344580	Engines	8525209020	Radio Telephones
8407344800	Engines	8525209050	Radio Telephones
8408202000	Compression Ignition Engine	8527210000	Radiobroadcast Receivers
8409911040	Cast Iron Parts	8527290000	Other Radiobroadcast Receiv
8409913000	Aluminum Cylinder Heads	8531800038	Radar Detectors
8409915010	Connecting Rods	8531809038	Radar Detectors
8409915080	Parts	8536410005	Signaling Flashers
8409919110	Connecting Rods	8539100020	Beam Lamp Units
8409919190	Parts	8539100040	Beam Lamp Units
8409919910	Connecting Rods	8544300000	Ignition Wiring Sets
8409991040	Cast-Iron parts	8707100020	Bodies
8409999110	Connecting Rods	8707100040	Bodies
8409999190	Parts	8707905020	Bodies
8413301000	Fuel Injection Pumps	8707905040	Bodies
8413309000	Fuel, Lub., or Cooling Pumps	8707905060	Bodies
8413309030	Fuel Pumps	8707905080	Bodies
8413309060	Lubricating Pumps	8708100010	Stampings of Bumpers
8413309090	Cooling Medium Pumps	8708100050	Bumpers and Parts
8413911000	Parts of Fuel Injection Pumps	8708210000	Seat Belts
8414308030	Compressors	8708290010	Stampings of Bodies
8414593000	Turbochargers	8708290025	Truck Caps

8414596040	Fans	8708290050	Parts & Access. of Bodies
8414598040	Fans & Blowers	8708290060	Parts & Access. of Bodies
8415200000	Air Conditioners	8708295025	Truck Caps
8415830040	Air Conditioners	8708295070	Other Pts & Access of Bodies
8415900040	Parts of Air Conditioners	8708310000	Mounted Brake Linings
8415908040	Parts of Air Conditioners	8708390000	Other Brakes
8415908045	Parts of Air Conditioners	8708401000	Gear Boxes
8421230000	Oil or Fuel Filters	8708402000	Gear Boxes
8421310000	Intake Air Filters	8708406000	Gear Boxes
8421394000	Catalytic Converters	8708500050	Drive Axles
8425490000	Jacks	8708600050	Non-Driving Axles
8426910000	Lifting Machinery	8708700050	Road Wheels & Pts.
8431100090	Parts of Winches, Jacks	8708805000	Suspension Shock Absorbers
8482101000	Ball Bearings	8708915000	Radiators
8482101040	Ball Bearings	8708925000	Radiators
8482101080	Ball Bearings	8708935000	Clutches and Parts
8482105044	Radial Bearings	8708945000	Steering Wheel, Column
8482105048	Radial Bearings	8708990045	Slide-in Campers
8482200010	Tapered Roller Bearings	8708990050	Pts & Access.
8482200020	Tapered Roller Bearings	8708990070	Wheel Hub Units
8482200030	Tapered Roller Bearings	8708990090	Other Pts & Access
8482200040	Tapered Roller Bearings	8708990095	Pts & Access
8482200050	Tapered Roller Bearings	8708995800	Wheel Hub Units
8482200060	Tapered Roller Bearings	8708996100	Airbags
8482200070	Tapered Roller Bearings	8708998015	Wheel Hub Units
8482200080	Tapered Roller Bearings	8708998030	Slide-In Campers
8482400000	Needle Roller Bearings	8708998075	Other Pts & Access
8482500000	Other Cylindrical Bearings	8716900000	Parts of Trailers
8483101030	Camshafts and Crankshafts	8716905000	Parts
8483103010	Camshafts and Crankshafts	9029100000	Revolution Counters
8501324500	Electric Motors	9029205000	Other Speedometers/Tacho
8507100060	Storage Batteries	9029900000	Pts & Access of Rev Counter
8507304000	Nickel-Cadmium Batteries	9104000000	Inst Panel Clocks
8507904000	Parts for Lead Acid Batteries	9401200000	Seats
8511100000	Spark Plugs	9401901000	Seat Parts
8511200000	Magnetos, Dynamos	9401901010	Seat Parts of Leather
8511300040	Distributors	9401901080	Seat Parts
8511300080	Ignition Coils	9403901000	Parts of Furnitures
8511400000	Starter Motors		
8511500000	Generators		
8511802000	Voltage Regulators		
8511806000	Other Engine Ignition Equip.		
8511902000	Parts for Voltage Regulators		
8511906020	Parts for Distributer Sets		
8511906040	Other Parts Engine Ignition		

8512202000	Lighting Equipment
8512202040	Lighting Equipment
8512204000	Signaling Equipment
8512204040	Signaling Equipment
8512300020	Horns
8512300030	Radar Dectector
8512300040	Sound Signaling Equipment
8512402000	Defrosters
8512404000	Windshield Wipers
8512902000	Parts of Signaling Equipment
8512906000	Lighting Equipment Parts
8512907000	Parts of Defrosters
8512909000	Parts of Windshield Wipers
8519910020	Cassette Tape Players
8519911000	Cassette Tape Players
8519934000	Cassette Tape Players
8525201500	Radio Transceivers
8525206020	Radio Telephones
8525209020	Radio Telephones
8527211005	Radio-Tape Players (CDs)
8527211010	Radio-Tape Players
8527211015	Radio-Tape Players
8527211020	Radio-Tape Players
8527211030	Radio-Tape Players
8527214000	Radio-Combinations
8527214040	Radio-Combinations
8527214800	Radio-Combinations
8527290020	Radio-Receivers AM
8527290040	Radio-Receivers FM/AM
8527290060	Radio-Receivers
8527294000	Radio-Receivers FM/AM
8527298020	Radio-Receivers AM
8527298060	Radio-Receivers
8531800038	Radar Detectors
8531808038	Radar Detectors
8531809038	Radar Detectors
8536410005	Signaling Flashers
8539100010	Beam Lamp Units
8539100020	Beam Lamp
8539100040	Beam Lamp
8539100050	Beam Lamp Units
8539212040	Halogen Lamps
8544300000	Ignition Wiring Sets
8707100020	Bodies
8707100040	Bodies

8707905020	Bodies
8707905040	Bodies
8707905060	Bodies
8707905080	Bodies
8708100010	Stampings of Bumpers
8708100050	Bumpers and Parts
8708103010	Stampings of Bumpers
8708103050	Bumpers
8708106010	Stampings Parts of Bumpers
8708106050	Parts of Bumpers
8708210000	Seat Belts
8708290010	Stampings of Bodies
8708290025	Truck Caps
8708290050	Parts & Access. of Bodies
8708290060	Parts & Access. of Bodies
8708291000	Inflators & Modules Airbags
8708291500	Door Assemblies
8708292000	Body Stampings
8708295010	Stampings
8708295025	Truck Caps
8708295060	Other Parts
8708315000	Mounted Brake Linings
8708395010	Brake Drums & Rotors
8708395020	Brake Drums
8708395030	Brake Rotors
8708395050	Brakes & Servo-Brakes
8708401000	Gear Boxes
8708402000	Gear Boxes
8708405000	Gear Boxes
8708503000	Drive Axles
8708505000	Drive Axles
8708508000	Drive Axles
8708605000	Non-Driving Axles
8708608010	Spindles
8708608050	Non-Driving Axles
8708704530	Road Wheels
8708704545	Road Wheels
8708704560	Wheel Rims
8708706030	Wheel Covers
8708706045	Wheel Covers & Hubcaps
8708706060	Parts & Access. for Wheels
8708708010	Wheels
8708708015	Wheels
8708708025	Wheels
8708708030	Wheels

8708708035	Wheels
8708708045	Wheel Rims
8708708050	Parts & Access. for Wheels
8708708060	Wheel Covers & Hubcaps
8708708075	Parts & Access. for Wheels
8708803000	Suspension Shock Absorbers
8708804500	Suspension Shock Absorbers
8708805000	Suspension Shock Absorbers
8708915000	Radiators
8708925000	Radiators
8708935000	Clutches & Parts
8708936000	Clutches
8708937500	Parts of Clutches
8708945000	Steering Wheels, Columns
8708993000	Cast Iron Parts
8708995005	Brake Hoses
8708995010	Steering Shaft Assemblies
8708995020	Wheel Hub Units
8708995030	Beam Hanger Brackets
8708995045	Slide in Campers
8708995060	Radiator Cores
8708995070	Cable Traction Devices
8708995080	Parts
8708995085	Parts
8708995090	Parts
8708995200	Cast Iron Parts
8708995500	Vibration Control Goods
8708995800	Wheel Hub Units
8708996100	Airbags
8708996400	Half Shafts & Drive Shafts
8708996700	Parts (joints?)
8708996710	Universal Joints-×01
8708996720	Universal Joints- ×01
8708996790	Other Joints-×01
8708997030	Beam Hanger Brackets
8708997060	Suspension System Parts
8708997330	Steering Shaft Assemblies
8708997360	Parts for Steering Systems
8708998005	Brake Hoses of Plastics
8708998015	Wheel Hub Units
8708998045	Radiator Cores
8708998060	Cable Traction Devices
8708998080	Parts
8716905010	Axles & Parts for Trailers
8716905030	Wheels for Trailers

8716905050	Parts for Trailers
8716905060	Parts for Trailers
8718995025	Wheel Hub Units
9029104000	Taximeters
9029108000	Revolution Counters, Odom.
9029204080	Other Speedometers, Tach.
9029902000	Parts & Access of Taximeters
9029908040	Parts & Access of Speed/Tac
9029908080	Parts & Access of Odometers
9104002510	MVT & Cases Panel Clock
9104004000	Instrument Panel Clocks
9104004510	Movements of Inst. Clock
9401200000	Seats
9401200010	Child Safety Seats
9401200090	Seats
9401901000	Seat Parts
9401901010	Seat Parts of Leather
9401901020	Seat Parts of Textile
9401901080	Seat Parts
9401901085	Seat Parts
9403406000	Wooden Furniture for M.V.
9403506000	Wooden Furniture for M.V.
9403901000?	Furniture
9403901040	Parts of Furniture for M.V.
9403901050	Parts of Furniture for M.V.
9403901080	Parts of Furniture for M.V.
9403901085	Parts of Furniture for M.V.
9802004020	Combust. Engine Repair
9802005030	Value of Repairs on Engines

North American Industry Classification System (NAICS)

335911	Storage Battery Mfg
336211	Motor Vehicle Body Mfg
336311	Carburetor, Piston, Piston Ring, & Valve Mfg
336312	Gasoline Engine & Engine Parts Mfg
336321	Vehicular Lighting Equipment Mfg
336322	Other Motor Vehicle Electrical & Electronic Equipment Mfg
336330	Motor Vehicle Steering & Suspension Component
336340	Motor Vehicle Brake System Mfg
336350	Motor Vehicle Transmission & Power Train Parts Mfg
336360	Motor Vehicle Seating & Interior Trim Mfg
336370	Motor Vehicle Metal Stamping
336391	Motor Vehicle Air-Conditioning Mfg
336399	All Other Motor Vehicle Parts Mfg

Description of NAICS codes by HTS codes

335911 Storage Battery Mfg

HTS Codes

8507100030	Lead Acid Batteries
8507100060	Lead Acid Batteries
8507100090	Lead Acid Batteries
8507204000	Lead Acid Batteries
8507208030	Lead Acid Batteries
8507208040	Lead Acid Batteries
8507208060	Lead Acid Batteries
8507208090	Lead Acid Batteries
8507304000	Nickel-Cad Batteries
8507308010	Nickel-Cad Batteries
8507308090	Nickel-Cad Batteries
8507404000	Nickel-Iron Batteries
8507408000	Nickel-Iron Batteries
8507804000	Other Batteries
8507808000	Other Batteries
8507904000	Parts for Batteries
8507908000	Parts for Batteries

Schedule B

8507100030	Lead-Acid Batteries
8507100060	Lead-Acid Batteries
8507100090	Lead-Acid Batteries
8507200030	Lead Acid Batteries
8507200040	Lead Acid Batteries
8507200060	Lead Acid Batteries
8507200090	Lead Acid Batteries
8507300000	Nickel-Cad Batteries
8507400000	Nickel-Iron Batteries
8507800000	Other Storage Batter
8507904000	Parts Lead Acid Batt
8507908000	Parts Storage Batter

336211 Motor Vehicle Bodies

HTS Codes

8707100020	Bodies Pass. Autos
8707905020	Bodies for Vehicles
8707905040	Bodies for Vehicles
8707905060	Bodies for Vehicles
8707905080	Bodies for Vehicles

Schedule B

8707100020	Bodies Pass. Autos
8707905020	Bodies Vehicles
8707905040	Bodies Vehicles
8707905060	Bodies Vehicles
8707905080	Bodies Vehicles

336311 Carburetor, Piston, Piston Ring, & Valve Mfg**336312 Motor Vehicle Gasoline Engines & Engine Parts**

HTS Codes

8407322040	SPK-IGN Eng Used
8407322080	SPK-IGN Eng New
8407336040	SPK-IGN Eng Used
8407336080	SPK-IGN Eng New
8407341400	SPK-IGN Eng Used
8407341800	SPK-IGN Eng New
8407344400	SPK-IGN Eng Used
8407344800	SPK-IGN Eng New
8409911040	Cast Iron Parts
8409913000	Alum. Cylinder Head
8409915010	Conn Rods
8409915080	Parts for SP-IG Eng
8413309030	Fuel Pumps
8413309060	Lub Pumps for Eng
8413309090	Cooling Med Pumps
8413919010	Parts, Fuel, Lub, Med
8414596040	Fans
8483101030	Cam/Crankshaft
8483506000	Flywheels

Schedule B

8407322000	Spark Ign Eng
8407332000	Spark Ign Eng
8407342030	Spark Ign Eng
8407342090	Spark Ign eng
8409914000	Parts Spark Ign Eng
8413309000	Fuel, Lub, Cool Pump
8413919010	Parts Fuel, L, C Pump
8414596040	Fans & Blowers
8483101020	Cam/Crankshaft

336321 Vehicular Lighting Equipment**HTS Codes**

8512102000	Bike Lighting Equip
8512104000	Bike Visual Signaling
8512202040	Lighting Equip
8512202080	Lightg Equip for Veh.
8512204040	Vis Sig Equip
8512204080	Vis Sig Equip for Veh
8512902000	Parts of Veh Sig Eq
8512904000	Parts of Lightg Bikes
8512906000	Veh Lightg Equip Par
8536410005	Auto Sig Flashers

Schedule B

8512100000	Lgtg/Vis Sig Eq Bike
8512202000	Veh Lighting Equip
8512204000	Veh Vis Signaling Eq
8512902000	Parts Signaling Equip
8512905000	Parts Lgtg Equip
8536410005	Auto Sig Flashers

336322 Motor Vehicle Electrical & Electronic Equipment**HTS Codes**

8511100000	IC Eng Spark Plugs
8511200000	IC Eng Magnetos
8511300040	IC Eng Distributors
8511300080	IC Eng Ignit. Coils
8511400000	IC Eng Starter Motors
8511500000	IC Eng Generators
8511802000	IC Eng Voltage Reg
8511804000	IC Eng Voltage Reg
8511806000	Other IC Eng Equip
8511902000	Parts IC Eng Ignit
8511904000	Parts IC Eng Volt Reg
8511906020	Parts IC Eng Dstr Pts
8511906040	Other Parts for IC En
8512402000	Veh. Defrosters
8512404000	Veh. Windshield Wip
8512907000	Parts Veh. Defrosters
8512909000	Parts Windshield Wip
8544300000	Insulated Wiring Veh
9032892000	Auto Volt Regulators
9032902000	Pts, Volt Regulators

Schedule B

8511100000	IC Eng Spark Plugs
8511200000	IC Eng Magnetos
8511300040	IC Eng Distributors
8511300080	IC Eng Ignition Coils
8511400000	IC Eng Starter Motors
8511500000	IC Eng Generators
8511802000	IC Eng Voltage Reg
8511804000	IC Eng Voltage Reg
8511806000	Other IC Eng Ign Eq
8511906020	Parts IC Eng Dstbr Pt
8511908000	Parts Electrical App
8512402000	Veh Defrosters
8512404000	Veh Windshield Wipe
8512908000	Pts Windshield Wiper
8544300000	Insulated Wiring Sets
9032893000	Voltage Regulators

336330 Motor Vehicle Steering & Suspension Components

HTS Codes

Schedule B

8708803000	Suspension Shock Ab	8708805000	Sus Shock Absorbers
8708804500	Suspension Shock Ab	8708945000	Steering Wheel Sys
8708945000	Steering Wh Systems		
8708997030	Beam Hanger Brack		
8708997060	Other Pt Susp System		
8708997330	Steering Shaft Assem		
8708997360	Parts NESOI		

336340 Motor Vehicle Brake System

HTS Codes

Schedule B

4009500020	Rubber Brake Hoses	4009500020	Brake Hoses
6813100010	Brk Lngs & Pads	6813100000	Brk Lngs, Asbestos
6813100050	Brk Lngs & Pads Asb	6813900000	Other Frict Materials
6813900010	Asbstos BSD Friction	8708310000	Mounted Brk Lngs
6813900050	Asbstos Friction Mat	8708390000	Brks & Servo-Brks
8708315000	Mounted Brk Lngs		
8708395010	Brk Drums		
8708395050	Brks NESOI		
8708998005	Brk Hoses		

336350 Motor Vehicle Transmission & Power Train Parts

HTS Codes

Schedule B

8708401000	Gear Boxes	8708401000	Gear Boxes, Parts
8708402000	Gear Boxes	8708402000	Gear Boxes & Parts
8708405000	Gear Boxes	8708406000	Gear Boxes for Veh
8708505000	Drive Axles	8708500050	Drive Axles
8708508000	Drive Axles	8708600050	Non-Driving Axles
8708605000	Non-Driving Axles	8708935000	Clutches & Parts
8708608010	Spindles	8708995800	Wheel Hub Units
8708608050	Non-Drive Axles	8708998015	Wheel Hub Units
8708936000	Clutches		
8708937500	Parts of Clutches		
8708995800	Wheel Hub Units		
8708996400	Parts of Motor Veh		
8708996700	Parts of Motor Veh		
8708998015	Wheel Hub Units		

336360 Motor Vehicle Seating & Interior Trim

HTS Codes

8708210000 Safety Seat Belts & Pt
9401104000 Seats Aircraft
9401108000 Seats Aircraft
9401200010 Child Safety Seats
9401200090 Seats
9401901080 Seat Parts

Schedule B

8708210000 Safety Seat Belts & Pt
9401100000 Seats Aircraft
9401200000 Seats Motor Veh
9401901080 Seat Parts Motor Veh

336370 Motor Vehicle Metal Stampings

HTS Codes

8708103010 Stampings Bumpers
8708106010 Stampings for Parts
8708292000 Body Stampings
8708295010 Stampings of Other

Schedule B

8708100010 Stampings of Bumper
8708290010 Stampings of Bodies

336391 Motor Vehicle Air Conditioning

HTS Codes

8414308030 Compressors
8415200000 Auto Air Conditioners
8415908045 Parts of Auto Air Con

Schedule B

8414308030 Compressors, Refri

336399 Motor Vehicle Parts

HTS Codes

8421230000 Oil/Fuel Filters
8421310000 Intake Air Filters
8421394000 Catalytic Converters
8483509040 Grooved Pulleys
8483509080 Pulley Blocks
8512300020 Motor Veh. Horns
8708103050 Bumpers
8708106050 Pts of Bumpers
8708291000 Inflators Airbags
8708291500 Door Assemblies
8708295060 Other Pts & Access

Schedule B

8421123000 Oil/Fuel Filters
8421310000 Intake Air Filters
8421394000 Catalytic Converters
8483508030 Grooved Pulleys
8708508080 Flywheels, Pulley Blk
8708100050 Bumpers & Parts
8708295070 Pts & Acc of Bodies
8708700050 Road Wheels & Pts
8708915000 Radiators
8708925000 Mufflers & Exhaust
8708996100 Airbags for Veh.

8708704530	Road Wheels
8708704545	Road Wheels Alum
8708704560	Road Wheels ex Alu
8708706030	Wheel rims
8708706045	Wheel Covers & Hub
8708706060	Pts & Acc for Wheels
8708915000	Radiators
8708925000	Mufflers & Exhaust
8708995200	Cast Iron Pts of Veh
8708995500	Vib Ctrl Goods
8708996100	Parts Airbags
8708998045	Radiator Cores
8708998060	Cable Traction Devic
8708998080	Parts NESOI
8716905010	Axles & Parts Trailer
8716905030	Wheel Trailers
8716905060	Parts NESO Trailers

8708998075	Pts & Acc for Veh
8716900000	Parts NESOI Trailers

Standard Industry Classification Codes (SIC)

3465 Automotive Stampings
3592 Carburetors, Pistons, Piston Rings, and Valves
3647 Vehicular Lighting
3691 Storage Batteries
3694 Engine Electrical Equipment
3714 Other Motor Vehicle Parts

NAICS Codes include products from the following SIC codes

2396 Automotive & Apparel Trimmings
2399 Fabricated Textile Products
2531 Public Building & Related Furniture
3292 Asbestos Products
3465 Automotive Stampings
3519 Internal Combustion Engines, Not Elsewhere Classified
3585 Refrigeration & Heating Equipment
3592 Carburetors, Pistons, Rings, & Valves
3647 Vehicular Lighting Equipment
3679 Electronic Components, Not Elsewhere Classified
3691 Storage Batteries
3694 Engine Electrical Equipment
3711 Motor Vehicles and Car Bodies
3713 Truck & Bus Bodies
3714 Motor Vehicle Parts and Accessories

SITC

6251 Tires	66472 Glass
62510 Tires	66481 Glass
6252 Tires	69915 Mount Fittings
62520 Tires	713 Engines
6647 Glass	7132 Internal Combustion Engines
66471 Glass	71321 Internal Combustion Engines

71322	Engines	74291	Pumps
71323	Engines	74343	Fans
71391	Engines	74363	Oil Filters
7422	Pumps	74364	Intake Air Filters
7444	Jacks for Vehicles	78425	Bodies
74443	Jacks for Vehicles	7843	Parts
74449	Jacks for Vehicles	78431	Bumpers
748	Transmission	78432	Other
7481	Transmission	78433	Brakes
74810	Transmission	78434	Gear Boxes
7489	Parts, NES	78435	Drive Axles
74890	For Transmission	78436	Non-Driving Axles
76211	Radios	78439	Parts and Accessories
76212	Radios	78689	Parts of Trailers
77313	Electric Wires	82112	Seats
77812	Batteries	87321	Taximeters
77823	Lights	87325	Speedometers and Tachometers
77831	Electric lighting	87329	Parts of Revolution Counters
77833	Parts of Ignition	88571	Instrument Panels
77834	Signaling Devices		
77835	Parts of Signal Devices		
784	Parts of Vehicles		
7841	Chassis		
78410	Chassis		
7842	Bodies		
78421	Bodies		

HTS Six-digit level automotive parts codes used for United Nations data

381900	700711	841520	851190	870821	870899
382000	700721	842123	851220	870829	871690
401010	700910	842131	851230	870831	871899
401110	732010	842549	851240	870839	902920
401120	732020	842691	851290	870840	902990
401210	830120	848310	851991	870850	910400
401211	830230	850710	851993	870860	940120
401212	840734	851110	852721	870870	940190
401310	840820	851120	852729	870880	
401593	840990	851130	854430	870891	
401693	840991	851140	870710	870892	
681310	840999	851150	870790	870893	
681390	841330	851180	870810	870894	

Table 1

Statistics for All U.S. Manufacturing Establishments														
	1997	Chg*	1998	Chg*	1999	Chg*	2000	Chg*	2001	Chg*	2002	Chg*	2003	Chg*
All Employees	16,805,127		16,944,977	0.8%	16,685,639	-1.5%	16,651,904	-0.2%	15,845,612	-4.8%	14,715,371	-7.1%	13,875,542	-5.7%
Employee Payroll (\$1,000)	569,808,845		586,957,735	3.0%	601,472,998	2.5%	617,211,426	2.6%	591,558,514	-4.2%	576,494,937	-2.5%	565,026,110	-2.0%
Production Workers	12,065,257		12,189,519	1.0%	11,977,196	-1.7%	11,943,646	-0.3%	11,212,063	-6.1%	10,352,516	-7.7%	9,794,517	-5.4%
Production Worker Hours (1,000)	24,183,271		24,582,584	1.7%	24,209,596	-1.5%	23,954,395	-1.1%	22,384,101	-6.6%	20,489,145	-8.5%	19,886,392	-2.9%
Production Worker Wages (\$1,000)	338,267,197		348,953,570	3.2%	355,790,664	2.0%	363,380,819	2.1%	342,268,242	-5.8%	337,118,875	-1.5%	329,715,154	-2.2%
Value of Industry Shipments (\$1,000)**	3,834,700,920		3,899,809,755	1.7%	4,031,884,590	3.4%	4,208,582,047	4.4%	3,970,204,964	-5.7%	3,920,631,826	-1.2%	3,979,917,101	1.5%

Source: *Annual Survey of Manufacturers, 2003*, released March 2005 by U.S. Department of Commerce, Bureau of the Census. * = From Previous Year

** = Industry Shipments are products shipped by industry establishments.

Table 2

Statistics for U.S. Motor Vehicle Parts Manufacturing, NAICS 336211 and 3363														
	1997	Chg*	1998	Chg*	1999	Chg*	2000	Chg*	2001	Chg*	2002	Chg*	2003	Chg*
All Employees	822,686		832,870	1.2%	842,344	1.1%	846,419	0.5%	777,774	-8.1%	771,421	-0.8%	710,856	-7.9%
Employee Payroll (\$1,000)	32,186,047		32,649,966	1.4%	35,980,174	10.2%	36,740,593	2.1%	32,825,802	-10.7%	33,640,557	2.5%	32,851,565	-2.3%
Production Workers	662,455		669,341	1.0%	680,104	1.6%	676,449	-0.5%	615,547	-9.0%	612,903	-0.4%	555,668	-9.3%
Production Worker Hours (1,000)	1,371,296		1,386,337	1.1%	1,431,002	3.2%	1,389,253	-2.9%	1,228,624	-11.6%	1,211,579	-1.4%	1,163,653	-4.0%
Production Worker Wages (\$1,000)	23,997,423		24,086,605	0.4%	27,035,565	12.2%	27,221,020	0.7%	23,682,724	-13.0%	24,666,017	4.2%	23,749,475	-3.7%
Value of Industry Shipments (\$1,000)**	181,507,106		187,458,951	3.3%	206,622,875	10.2%	208,179,966	0.8%	190,711,569	-8.4%	212,610,705	11.5%	209,055,569	-1.7%
Value of Product Shipments (\$1,000)***	179,709,666		186,966,036	4.0%	205,669,893	10.0%	206,443,783	0.4%	188,487,002	-8.7%	204,265,639	8.4%	200,924,074	-1.6%

Source: *Annual Survey of Manufacturers, 2003*, released March 2005 by U.S. Department of Commerce, Bureau of the Census. * = From Previous Year

** = Industry Shipments are products shipped by industry establishments. *** = Product Shipments are all products regardless of industry establishment.

Table 3

Table 3

U.S. Exports of Automotive Parts (\$millions)																
	1997	%Chg	1998	%Chg	1999	%Chg	2000	%Chg	2001	%Chg	2002	%Chg	2003	%Chg	2004	%Chg
Parts Exports	41,119		46,807	13.8%	49,901	6.6%	53,720	7.7%	49,794	-7.3%	50,087	0.6%	48,501	-3.2%	52,628	8.5%
All Export Commodities	687,598		680,474	-1.0%	692,821	1.8%	780,419	12.6%	731,026	-6.3%	693,257	-5.2%	723,743	4.4%	816,548	12.8%
% Share	6.0%		6.9%	15.0%	7.2%	4.7%	6.9%	-4.4%	6.8%	-1.0%	7.2%	6.1%	6.7%	-7.2%	6.4%	-3.8%

Source: U.S. Census Bureau

Table 4

Total World Original Equipment Parts Market															
	1997	% Change	1998	% Change	1999	% Change	2000	% Change	2001	% Change	2002	% Change	2003	% Change	
OE Parts Market (\$millions)	635,822		657,467	3.4%	775,638	18.0%	759,315	-2.1%	711,808	-6.3%	729,656	2.5%	802,850	10.0%	
Total OE Parts per Vehicle (\$)	10,966		12,613	15.0%	14,053	11.4%	13,242	-5.8%	12,892	-2.6%	12,641	-1.9%	13,651	8.0%	

Source: OESA Industry Review 2003

Table 5

Employment in the U.S. Automotive Parts Industry, Thousands									
NAICS	Description	2001	% Change	2002	% Change	2003	% Change	2004	% Change
336211	Motor Vehicle Bodies	75.8	-7.3%	68.3	-9.9%	61.9	-9.4%	65.9	6.5%
3363	Motor Vehicle Parts	774.7	-7.7%	733.6	-5.3%	707.8	-3.5%	688.3	-2.8%
33631	MV Gasoline Engine and Parts	96.7	-7.2%	93.0	-3.8%	85.5	-8.1%	79.1	-7.5%
336311	Carburators, Pistons, Rings, and Valves	21.3	-8.2%	19.9	-6.6%	17.7	-11.1%	16.4	-7.3%
336312	Gasoline Engine and Engine Parts	75.5	-6.8%	73.1	-3.2%	67.8	-7.3%	62.7	-7.5%
33632	MV Electric Equipment	120.1	-10.1%	110.1	-8.3%	104.0	-5.5%	100.3	-3.6%
336321	Vehicular Lighting Equipment	17.8	-6.8%	17.2	-3.4%	17.2	0.0%	16.6	-3.5%
336322	Other MV Electric Equipment	102.3	-10.7%	92.9	-9.2%	86.9	-6.5%	83.7	-3.7%
33633	MV Steering and Suspension Parts	51.5	-7.5%	47.4	-8.0%	44.6	-5.9%	42.7	-4.3%
33634	MV Brake Systems	46.6	-7.0%	45.3	-2.8%	45.9	1.3%	45.5	-0.9%
33635	MV Power Train Components	95.7	-8.2%	91.7	-4.2%	91.2	-0.5%	85.0	-6.8%
33636	MV Seating and Interior Trim	64.9	-5.8%	62.0	-4.5%	62.2	0.3%	66.9	7.6%
33637	MV Metal Stamping	111.6	-8.0%	105.5	-5.5%	101.9	-3.4%	97.8	-4.0%
33639	Other MV Parts	187.5	-6.9%	178.5	-4.8%	172.4	-3.4%	171.0	-0.8%
336399	All other MV Parts	169.7	-6.8%	163.5	-3.7%	158.4	-3.1%	158.5	0.1%
Total	336211+3363	850.5	-7.7%	801.9	-5.7%	769.7	-4.0%	754.2	-2.0%

Source: Bureau of Labor Statistics

Table 6

Employment in the U.S. Automotive Parts Industry														
NAICS	1997	% Change	1998	% Change	1999	% Change	2000	% Change	2001	% Change	2002	% Change	2003	% Change
Bodies and Body Parts														
336211	42,773		43,306	1.2%	43,170	-0.3%	43,844	1.6%	41,771	-4.7%	41,238	-1.3%	40,391	-2.1%
336360	47,885		48,898	2.1%	55,455	13.4%	58,028	4.6%	52,670	-9.2%	56,041	6.4%	54,852	-2.1%
336370	126,668		123,214	-2.7%	118,695	-3.7%	117,012	-1.4%	112,488	-3.9%	125,636	11.7%	106,292	-15.4%
Total	217,326		215,418	-0.9%	217,320	0.9%	218,884	0.7%	206,929	-5.5%	222,915	7.7%	201,535	-9.6%
Chassis and Drivetrain Parts														
336330	48,676		47,682	-2.0%	48,747	2.2%	50,972	4.6%	47,015	-7.8%	41,783	-11.1%	39,696	-5.0%
336340	43,146		45,807	6.2%	44,638	-2.6%	44,331	-0.7%	38,736	-12.6%	42,356	9.3%	41,217	-2.7%
336350	100,605		102,538	1.9%	111,338	8.6%	112,244	0.8%	98,753	-12.0%	102,269	3.6%	89,281	-12.7%
Total	192,427		196,027	1.9%	204,723	4.4%	207,547	1.4%	184,504	-11.1%	186,408	1.0%	170,194	-8.7%
Electrical and Electronic Parts														
336321	16,624		15,660	-5.8%	17,233	10.0%	15,055	-12.6%	14,665	-2.6%				
336322	97,572		99,295	1.8%	100,345	1.1%	102,564	2.2%	94,812	-7.6%				
33632	114,196		114,955	0.7%	117,578	2.3%	117,619	0.0%	109,477	-6.9%	98,519	-10.0%	92,339	-6.3%
336391	21,522		21,310	-1.0%	21,477	0.8%	20,393	-5.0%	19,594	-3.9%	19,053	-2.8%	18,870	-1.0%
Total	135,718		136,265	0.4%	139,055	2.0%	138,012	-0.8%	129,071	-6.5%	117,572	-8.9%	111,209	-5.4%
Engines and Engine Parts														
336311	17,241		17,706	2.7%	17,341	-2.1%	17,748	2.3%	16,656	-6.2%				
336312	80,582		80,887	0.4%	80,209	-0.8%	78,600	-2.0%	71,979	-8.4%				
33631	97,823		98,593	0.8%	97,550	-1.1%	96,348	-1.2%	88,635	-8.0%	99,879	12.7%	87,365	-12.5%
Total	97,823		98,593	0.8%	97,550	-1.1%	96,348	-1.2%	88,635	-8.0%	99,879	12.7%	87,365	-12.5%
Miscellaneous Automotive Parts														
336399	179,392		186,567	4.0%	183,696	-1.5%	185,628	1.1%	168,635	-9.2%	144,647	-14.2%	140,552	-2.8%
Total	179,392		186,567	4.0%	183,696	-1.5%	185,628	1.1%	168,635	-9.2%	144,647	-14.2%	140,552	-2.8%
Total	822,686		832,870	1.2%	842,344	1.1%	846,419	0.5%	777,774	-8.1%	771,421	-0.8%	710,855	-7.9%

Source: U.S. Department of Commerce, *Annual Survey of Manufacturers 2003*.

Table 7

U.S. Original Equipment Parts Market								
	1997	1998	1999	2000	2001	2002	2003	2004
Size of U.S OE Parts Market (\$US Billions)	147.7	162.9	190.0	178.1	164.8	167.2	162.1	159.6
U.S. Vehicle Production (Units)	12,130,575	12,002,663	13,024,978	12,773,714	11,424,689	12,279,582	12,087,028	11,955,852
Content per Vehicle (\$US)	12,176.0	13,571.0	14,590.0	13,940.0	14,423.0	13,617.0	13,413.0	13,346.0
OE Parts Sourced from U.S. Suppliers* (\$US Billions)	108.4	121.3	142.4	126.4	116.5	113.8	104.4	95.0
<i>% of Total OE Parts Market</i>	73.4%	74.5%	74.9%	71.0%	70.7%	68.1%	64.4%	59.5%
Imports of Parts (\$US Billions)	39.4	41.6	47.7	51.7	48.3	53.4	57.7	64.6
<i>% of Total OE Parts Market</i>	26.7%	25.5%	25.1%	29.0%	29.3%	31.9%	35.6%	40.5%
Imports from Canada	11.4	12.2	14.3	14.7	13.1	14.5	15.7	17.0
<i>% of Parts Imports</i>	28.9%	29.3%	30.0%	28.4%	27.1%	27.2%	27.2%	26.3%
<i>% of Total OE Parts Market</i>	7.7%	7.5%	7.5%	8.3%	7.9%	8.7%	9.7%	10.7%
Imports from Mexico	10.2	10.9	12.5	13.8	13.2	15.0	15.8	17.6
<i>% of Parts Imports</i>	25.9%	26.2%	26.2%	26.7%	27.3%	28.1%	27.4%	27.2%
<i>% of Total OE Parts Market</i>	6.9%	6.7%	6.6%	7.7%	8.0%	9.0%	9.7%	11.0%
Imports from Japan	10.9	9.6	10.3	12.0	11.1	11.2	11.4	13.0
<i>% of Parts Imports</i>	27.7%	23.1%	21.6%	23.2%	23.0%	21.0%	19.8%	20.1%
<i>% of Total OE Parts Market</i>	7.4%	5.9%	5.4%	6.7%	6.7%	6.7%	7.0%	8.1%
Imports from China	0.3	0.4	0.6	0.8	1.0	1.3	1.7	2.4
<i>% of Parts Imports</i>	0.8%	1.0%	1.3%	1.5%	2.1%	2.4%	2.9%	3.7%
<i>% of Total OE Parts Market</i>	0.2%	0.2%	0.3%	0.4%	0.6%	0.8%	1.0%	1.5%
Imports from all other countries	6.5	8.5	9.9	10.3	10.0	11.4	13.1	14.6
<i>% of Parts Imports</i>	16.5%	20.4%	20.8%	19.9%	20.7%	21.3%	22.7%	22.6%
<i>% of Total OE Parts Market</i>	4.4%	5.2%	5.2%	5.8%	6.1%	6.8%	8.1%	9.1%

*U.S. Suppliers include U.S. Affiliates of Foreign Manufacturers.

Source: DesRosiers and Automotive News

Table 8

Top 10 OE Suppliers for North America										
	2000	NA Sales	2001	NA Sales	2002	NA Sales	2003	NA Sales	2004	NA Sales
	Company	(\$Millions)	Company	(\$Millions)	Company	(\$Millions)	Company	(\$Millions)	Company	(\$Millions)
1	Delphi Corp	21,449	Delphi Corp.	18,867	Delphi Corp	19,656	Delphi Corp	19,450	Delphi Corp	17,596
2	Visteon Corp	15,041	Visteon Corp	11,736	Visteon Corp.	12,168	Visteon Corp.	11,080	Visteon Corp.	11,328
3	Lear Corp.	8,601	Lear Corp	8,858	Lear Corp.	9,504	Lear Corp.	9,448	Magna Int'l Inc.	9,871
4	Johnson Controls Inc.	8,534	Johnson Controls Inc	7,353	Johnson Controls Inc.	7,687	Magna Int'l Inc.	8,736	Johnson Controls Inc.	9,500
5	Dana Corp.	7,100	Magna Intl Inc	7,140	Magna Int'l Inc.	7,650	Johnson Controls Inc.	8,021	Lear Corp.	9,282
6	Magna Intl Inc.	6,868	Dana Corp	5,250	Dana Corp.	5,340	Dana Corp.	5,543	Robert Bosch Corp.	6,256
7	Robert Bosch Corp.	5,874	TRW Automotive	4,992	TRW Automotive	4,950	Robert Bosch Corp.	5,336	Dana Corp.	5,977
8	TRW Automotive	5,202	Robert Bosch Corp.	4,120	Robert Bosch Corp.	4,390	TRW Automotive	4,633	Denso Int'l America Inc.	4,324
9	ArvinMeritor Inc.	4,154	Denso Intl America Inc.	3,689	Denso Int'l America Inc.	3,769	ThyssenKrupp***	4,401	TRW Automotive	4,235
10	Denso Intl America Inc.	3,803	ArvinMeritor Inc	2,045	American Axle & Manu.**	3,341	Denso Int'l America Inc.	3,894	ThyssenKrupp***	4,057
Top 10 Total		86,626		74,050		78,455		80,542		82,426
Top 150 Total		189,400		166,400		182,100		187,650		199,660

Source: Automotive News. *calculated estimate. **American Axle and Manufacturing Holdings Inc. ***ThyssenKrupp Automotive AG

Table 9

Top 10 Global OEM Suppliers										
	2000	Global OEM Sales	2001	Global OEM Sales	2002	Global OEM Sales	2003	Global OEM Sales	2004	Global OEM Sales
	Company	(\$Millions)	Company	(\$Millions)	Company	(\$Millions)	Company	(\$Millions)	Company	(\$Millions)
1	Delphi Corp	26,480	Delphi Corp.	24,188	Delphi Corp.	25,527	Delphi Corp.	26,200		
2	Visteon Corp	18,569	Robert Bosch GmbH	18,000	Robert Bosch GmbH	19,085	Robert Bosch GmbH	23,200		
3	Robert Bosch GmbH	17,800	Visteon Corp.	16,945	Visteon Corp.	16,900	Denso Corp.	16,856		
4	Denso Corp.	16,392	Denso Corp.	16,250	Denso Corp.	15,348	Visteon Corp.	16,513		
5	Lear Corp.	14,073	Lear Corp.	13,625	Lear Corp.	14,400	Lear Corp.	15,747		
6	Johnson Controls Inc.	12,738	Johnson Controls In.	13,620	Johnson Controls In.	13,653	Magna Int'l Inc.	15,345		
7	TRW Automotive	10,200	Magna Int'l Inc.	10,500	Magna Int'l Inc.	12,188	Johnson Controls Inc.	15,192		
8	Magna Int'l Inc.	10,100	TRW Automotive	9,600	Aisin Seiki Co. Ltd.	10,716	Aisin Seiki Co. Ltd.	13,534		
9	Dana Corp.	9,467	Faurecia	8,600	Faurecia	10,000	Faurecia	12,700		
10	Valeo SA	6,959	Aisin Seiki Co. Ltd.	8,460	TRW Automotive	9,900	TRW Automotive	11,300		
Top 10 Total		142,778		139,788		147,717		166,587		
Top 100 Total		350,600		347,900		353,385		401,545		

Source: Automotive News. *calculated estimate. **American Axle and Manufacturing Holdings Inc.

Table 10

World Shipments of the 20 Largest Exporters of Automotive Parts (\$Thousands)

2000		2001		2002		2003	
Reporters	304,247,503	Reporters	290,030,040	Reporters*	250,458,921	Reporters	351,009,442
United		United		United		United	
1 States	60,932,233	1 States	56,055,888	1 States	56,901,556	1 States	58,267,447
2 Japan	38,049,553	2 Germany	38,631,380	2 Germany	N/A	2 Germany	56,499,527
3 Germany	37,307,026	3 Japan	33,771,352	3 Japan	36,251,190	3 Japan	41,185,555
4 France	23,080,070	4 France	21,430,753	4 France	22,713,109	4 France	28,084,760
5 Mexico	20,249,182	5 Mexico	20,413,237	5 Mexico	22,577,412	5 Mexico	23,253,999
6 Canada	19,579,414	6 Canada	17,827,508	6 Canada	19,161,268	6 Canada	20,871,562
United							
7 Kingdom	13,866,088	7 Italy	12,863,644	7 Italy	13,444,109	7 Italy	16,782,264
		United		United		United	
8 Italy	12,821,469	8 Kingdom	12,432,790	8 Kingdom	13,151,242	8 Kingdom	15,064,779
9 Spain	10,771,584	9 Spain	10,732,893	9 Austria	6,711,131	9 Belgium	9,518,666
				Czech		Czech	
10 Belgium	6,908,166	10 Belgium	6,828,588	10 Republic	6,078,884	10 Republic	8,119,096
11 Austria	5,926,345	11 Austria	6,090,296	11 Hungary	5,805,292	11 Austria	8,025,772
12 Korea	4,771,477	12 Korea	4,881,518	12 China	5,744,439	12 Hungary	7,717,828
13 Hungary	4,615,060	13 Sweden	4,836,375	13 Sweden	5,542,503	13 China	7,694,064
		Czech					
14 Sweden	4,546,519	14 Republic	4,702,496	14 Korea	5,506,682	14 Poland	7,507,685
15 Brazil	4,285,162	15 China	4,337,469	15 Poland	5,114,278	15 Sweden	6,840,043
16 China	3,859,718	16 Brazil	4,013,179	16 Netherlands	4,070,284	16 Brazil	5,264,662
Czech							
17 Republic	3,796,119	17 Poland	3,989,085	17 Portugal	3,032,415	17 Slovakia	3,649,836
18 Netherlands	3,293,460	18 Netherlands	3,284,975	18 Turkey	1,750,602	18 Thailand	3,198,565
19 Poland	3,134,302	19 Thailand	1,915,635	19 Slovakia	1,735,219	19 Hong Kong	2,798,696
20 Portugal	2,596,184	20 Turkey	1,477,795	20 Singapore	1,615,820	20 Turkey	2,285,585

Source: United Nations data, using OAAI product groups. Total FOB Exports, Thousands of Dollars. Ranked Annually of all countries reporting in each year.

*Germany, Brazil, Spain, and Belgium did not report in 2002.

Table 11

U.S. AUTOMOTIVE PARTS EXPORTS, 1998 - 2004
 In millions of dollars

Region/Country	1998	1999	2000	2001	2002	2003	2004	% Chg
WORLD	46,807	49,901	53,720	49,794	50,087	48,501	52,628	8.5%
ASIA and the PACIFIC								
Select ASEAN								
Indonesia	38	27	34	21	22	23	34	45.9%
Malaysia	22	58	35	26	29	27	20	-26.3%
Philippines	42	55	53	29	59	88	71	-19.4%
Singapore	134	150	135	143	141	142	149	5.4%
Thailand	119	127	143	85	86	96	96	0.3%
Total ASEAN (1)	360	419	402	309	343	385	381	-1.1%
Chinese Economic Area								
China	132	251	225	258	344	510	636	24.6%
Hong Kong	190	114	91	82	75	75	88	18.4%
Taiwan	212	84	79	75	77	133	111	-16.4%
Total Chinese Economic Area	535	449	395	415	495	718	835	16.4%
Select Other Asia and the Pacific								
Australia	590	564	700	577	615	656	768	17.1%
India	42	46	41	38	39	42	65	54.6%
Japan	2,139	1,893	2,217	2,008	2,285	2,051	1,534	-25.2%
Korea	364	597	454	369	332	309	466	51.0%
EUROPE								
Select European Union								
Austria	1,086	1,164	1,056	1,117	944	556	487	-12.3%
Belgium	508	348	385	348	393	383	347	-9.4%
France	268	281	366	407	355	446	599	34.2%
Germany	1,019	950	974	1,116	941	1,019	1,256	23.2%
Italy	128	112	135	158	122	140	132	-5.6%
Netherlands	185	201	322	326	317	297	309	4.1%
Spain	111	88	121	93	102	134	134	-0.3%
Sweden	207	204	143	127	154	208	241	15.6%
United Kingdom	844	1,191	1,241	1,236	1,072	1,061	994	-6.4%
Total European Union (2)	4,434	4,609	4,848	5,048	4,492	4,345	4,615	6.2%
Select Other Europe								
Czech Republic	16	20	14	8	11	9	8	-19.9%
Hungary	53	59	33	20	52	67	55	-17.5%
Poland	20	23	13	14	15	17	20	20.2%
Russia	28	16	15	27	17	25	31	24.2%
Total Other Europe	117	119	75	69	95	118	114	-3.5%
WESTERN HEMISPHERE								
Select Andean Community								
Colombia	155	70	81	76	69	68	103	51.9%
Venezuela**	518	390	537	595	310	168	392	132.7%
Total Andean Community (3)	778	520	675	778	461	326	592	81.7%
Select Central America								
Total Central America (4)	191	181	160	142	151	143	202	41.4%
Select MERCOSUR								
Argentina	361	188	225	112	37	93	132	42.2%
Brazil**	954	454	401	444	454	480	565	17.9%
Chile	128	94	92	79	102	103	123	18.9%
Total MERCOSUR (5)	1,472	767	736	647	598	685	830	21.1%
NAFTA								
Canada	25,298	29,643	29,601	26,372	27,968	27,474	29,914	8.9%
Mexico*	9,502	9,271	12,559	12,010	11,326	10,343	11,304	9.3%
Total NAFTA	34,799	38,915	42,161	38,381	39,293	37,817	41,219	9.0%
ALL OTHERS	985	823	858	1,012	887	907	1,009	11.2%

Exports, f.a.s.

Source: U.S. Census Bureau

Prepared by: Forrest Nielsen, 202-482-1418. 11 February 2005.

Notes:

**1998 and 1999 data include transshipments to Brazil and Venezuela through St. Vincent and Grenadines.

1) The ASEAN region comprises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

2) The selected European Union countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, the United Kingdom, Austria, Finland, and Sweden.

3) The Andean Community comprises Bolivia, Colombia, Ecuador, Peru, and Venezuela.

4) Central America comprises Costa Rica, El Salvador, Guatemala, Honduras, and Panama.

5) The MERCOSUR countries are Argentina, Brazil, Chile, Paraguay, and Uruguay.

Table 12

U.S. AUTOMOTIVE PARTS IMPORTS, 1998 - 2004

In millions of dollars

Region/Country	1998	1999	2000	2001	2002	2003	2004	%Chg
WORLD	54,365	61,619	66,959	62,726	69,089	74,469	83,444	12.1%
ASIA and the PACIFIC								
Select ASEAN								
Indonesia	204	264	269	282	320	298	362	21.6%
Malaysia	230	275	286	244	263	255	274	7.3%
Philippines	267	324	408	360	349	386	399	3.5%
Singapore	192	178	156	147	134	100	106	6.2%
Thailand	368	421	415	411	546	529	582	9.8%
Total ASEAN (1)	1,260	1,462	1,535	1,444	1,619	1,586	1,747	10.2%
Chinese Economic Area								
China	1,037	1,284	1,635	1,758	2,242	2,788	3,884	39.3%
Hong Kong	55	61	57	41	51	80	89	11.5%
Taiwan	931	1,062	1,033	1,085	1,294	1,366	1,604	17.4%
Total Chinese Economic Area	2,023	2,407	2,725	2,885	3,587	4,234	5,577	31.7%
Select Other Asia and the Pacific								
Australia	179	248	251	186	198	205	220	7.2%
India	162	161	190	179	202	234	333	42.1%
Japan	11,878	12,775	14,535	13,150	13,498	13,745	15,494	12.7%
Korea	762	919	1,082	1,122	1,383	1,546	1,866	20.7%
EUROPE								
Select European Union								
Austria	238	211	230	201	222	281	240	-14.6%
Belgium	83	90	97	82	89	100	95	-4.8%
France	1,094	1,303	1,133	1,165	1,197	1,302	1,478	13.5%
Germany	3,114	3,451	3,874	3,746	4,336	5,426	6,147	13.3%
Italy	432	447	474	525	652	751	874	16.4%
Netherlands	59	60	60	66	71	70	81	15.1%
Spain	275	346	301	269	349	420	464	10.6%
Sweden	319	292	241	188	212	229	345	50.5%
United Kingdom	1,031	1,118	1,190	976	1,106	1,068	1,045	-2.2%
Total European Union (2)	6,742	7,451	7,716	7,375	8,425	9,858	11,009	11.7%
Select Other Europe								
Czech Republic	29	53	60	86	125	150	156	3.9%
Hungary	120	95	97	100	180	315	219	-30.5%
Poland	19	19	42	43	57	95	103	7.9%
Russia	4	4	4	2	2	3	5	56.2%
Total Other Europe	172	172	203	230	364	564	483	-14.3%
WESTERN HEMISPHERE								
Select Andean Community								
Colombia	6	7	8	10	13	16	14	-10.0%
Venezuela	184	207	235	159	172	191	190	-0.9%
Total Andean Community (3)	194	219	249	179	199	216	217	0.2%
Select Central America								
Total Central America (4)	28	61	91	69	105	181	345	90.7%
Select MERCOSUR								
Argentina	72	131	177	233	223	185	178	-3.9%
Brazil	1,240	1,360	1,248	955	1,275	1,474	1,711	16.0%
Chile	24	36	42	33	33	46	64	37.6%
Total MERCOSUR (5)	1,338	1,529	1,473	1,225	1,538	1,708	1,956	14.5%
NAFTA								
Canada	14,712	16,934	17,634	15,787	17,217	18,569	20,164	8.6%
Mexico	14,481	16,768	18,663	18,180	20,069	21,039	23,104	9.8%
Total NAFTA	29,193	33,702	36,297	33,967	37,286	39,607	43,268	9.2%
ALL OTHERS	434	512	613	714	686	783	927	18.3%

Imports, customs value

Source: U.S. Census Bureau

Prepared by: Forrest Nielsen, 202-482-1418, 11 February 2005

Notes:

1) The ASEAN region comprises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

2) The selected European Union countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, the United Kingdom, Austria, Finland, and Sweden.

3) The Andean Community comprises Bolivia, Colombia, Ecuador, Peru, and Venezuela.

4) Central America comprises Costa Rica, El Salvador, Guatemala, Honduras, and Panama.

5) The MERCOSUR countries are Argentina, Brazil, Chile, Paraguay, and Uruguay.

Table 13

U.S. AUTOMOTIVE PARTS TRADE BALANCE, 1998 - 2004

In millions of dollars

Region/Country	1998	1999	2000	2001	2002	2003	2004	%Chg
WORLD	-7,558	-11,719	-13,239	-12,932	-19,002	-25,968	-30,816	18.7%
ASIA and the PACIFIC								
Select ASEAN								
Indonesia	-166	-237	-236	-261	-298	-274	-328	19.5%
Malaysia	-208	-218	-251	-218	-234	-229	-254	11.2%
Philippines	-225	-268	-355	-331	-290	-298	-328	10.2%
Singapore	-58	-28	-21	-4	8	42	43	3.6%
Thailand	-249	-294	-272	-326	-460	-433	-485	12.0%
Total ASEAN (1)	-900	-1,043	-1,133	-1,135	-1,276	-1,201	-1,367	13.8%
Chinese Economic Area								
China	-905	-1,033	-1,410	-1,501	-1,898	-2,278	-3,249	42.6%
Hong Kong	136	53	35	41	23	-5	0	-95.9%
Taiwan	-719	-978	-954	-1,010	-1,217	-1,233	-1,493	21.1%
Total Chinese Economic Area	-1,488	-1,958	-2,330	-2,470	-3,092	-3,516	-4,742	34.9%
Select Other Asia and the Pacific								
Australia	412	316	449	391	416	451	548	21.6%
India	-120	-115	-149	-142	-163	-192	-268	39.4%
Japan	-9,740	-10,883	-12,318	-11,141	-11,213	-11,695	-13,961	19.4%
Korea	-398	-322	-628	-753	-1,051	-1,238	-1,400	13.2%
EUROPE								
Select European Union								
Austria	848	953	826	916	722	275	247	-10.0%
Belgium	425	258	288	266	304	283	252	-11.1%
France	-826	-1,022	-767	-759	-843	-856	-879	2.7%
Germany	-2,095	-2,502	-2,900	-2,630	-3,395	-4,407	-4,891	11.0%
Italy	-304	-336	-338	-367	-530	-611	-741	21.4%
Netherlands	126	141	262	260	246	227	228	0.7%
Spain	-164	-258	-180	-176	-246	-286	-331	15.7%
Sweden	-112	-88	-98	-61	-58	-21	-105	393.9%
United Kingdom	-187	72	51	260	-34	-6	-51	687.7%
Total European Union (2)	-2,308	-2,843	-2,868	-2,327	-3,932	-5,513	-6,394	16.0%
Select Other Europe								
Czech Republic	-12	-33	-46	-78	-114	-141	-149	5.5%
Hungary	-68	-36	-64	-80	-128	-249	-164	-34.0%
Poland	1	4	-29	-29	-42	-78	-82	5.3%
Russia	24	12	11	25	15	22	26	19.5%
Total Other Europe	-55	-53	-128	-161	-269	-446	-369	-17.2%
WESTERN HEMISPHERE								
Select Andean Community								
Colombia	148	63	73	66	56	52	89	70.6%
Venezuela	334	183	302	436	138	-23	202	-980.9%
Total Andean Community (3)	584	300	426	598	262	109	375	243.3%
Select Central America								
Total Central America (4)	163	120	69	73	46	-38	-144	273.8%
Select MERCOSUR								
Argentina	289	57	49	-120	-186	-92	-46	-50.1%
Brazil	-286	-905	-847	-510	-821	-995	-1,145	15.1%
Chile	104	58	50	46	69	57	59	3.7%
Total MERCOSUR (5)	134	-763	-737	-578	-939	-1,023	-1,126	10.1%
NAFTA								
Canada	10,586	12,709	11,967	10,585	10,751	8,906	9,751	9.5%
Mexico	-4,980	-7,496	-6,104	-6,170	-8,744	-10,696	-11,800	10.3%
Total NAFTA	5,606	5,213	5,864	4,415	2,007	-1,790	-2,049	14.5%
ALL OTHERS	552	311	244	298	202	124	82	-33.6%

Source: U.S. Census Bureau

Prepared by: Forrest Nielsen, 202-482-1418 11 February 2005.

Notes:

1) The ASEAN region comprises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

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Table 14

Acquisitions of U.S. Automotive Parts Companies (SIC 3714)									
		1997	1998	1999	2000	2001	2002	2003	2004
Number of all Deals*		57	61	57	38	38	30	38	27
Value of all Deals* (\$Millions)		4,065.3	11,666.8	15,892.5	5,078.4	1,132.5	6863.5	7528.7	2144.3

Source: Thomson Financial IBCM in *AAIA Aftermarket Factbook 2005/2006*.

*Includes deals with and without reported values.

Chart 1

Aftermarket sales track the economy. Sales grew an estimated 32% from 1997 to 2004, compared with 41% for the nation's total GDP. The aftermarket accounted for 1.7% of the 1997 GDP and an estimated 1.6% in 2004.

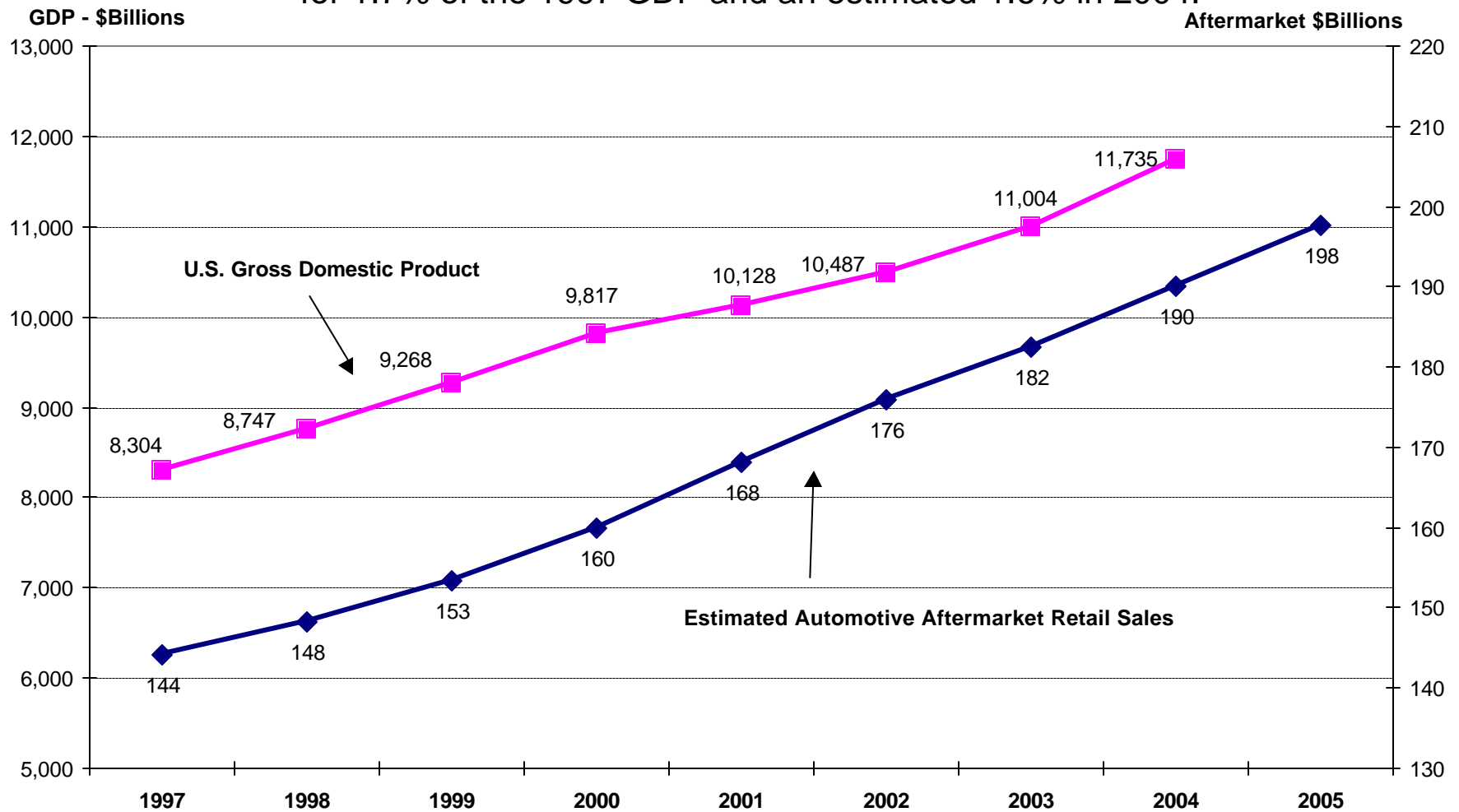


Chart 2

Gross Domestic Product, Manufacturing Industry Shipments, and Automotive Parts Industry Shipments, 1997-2004.

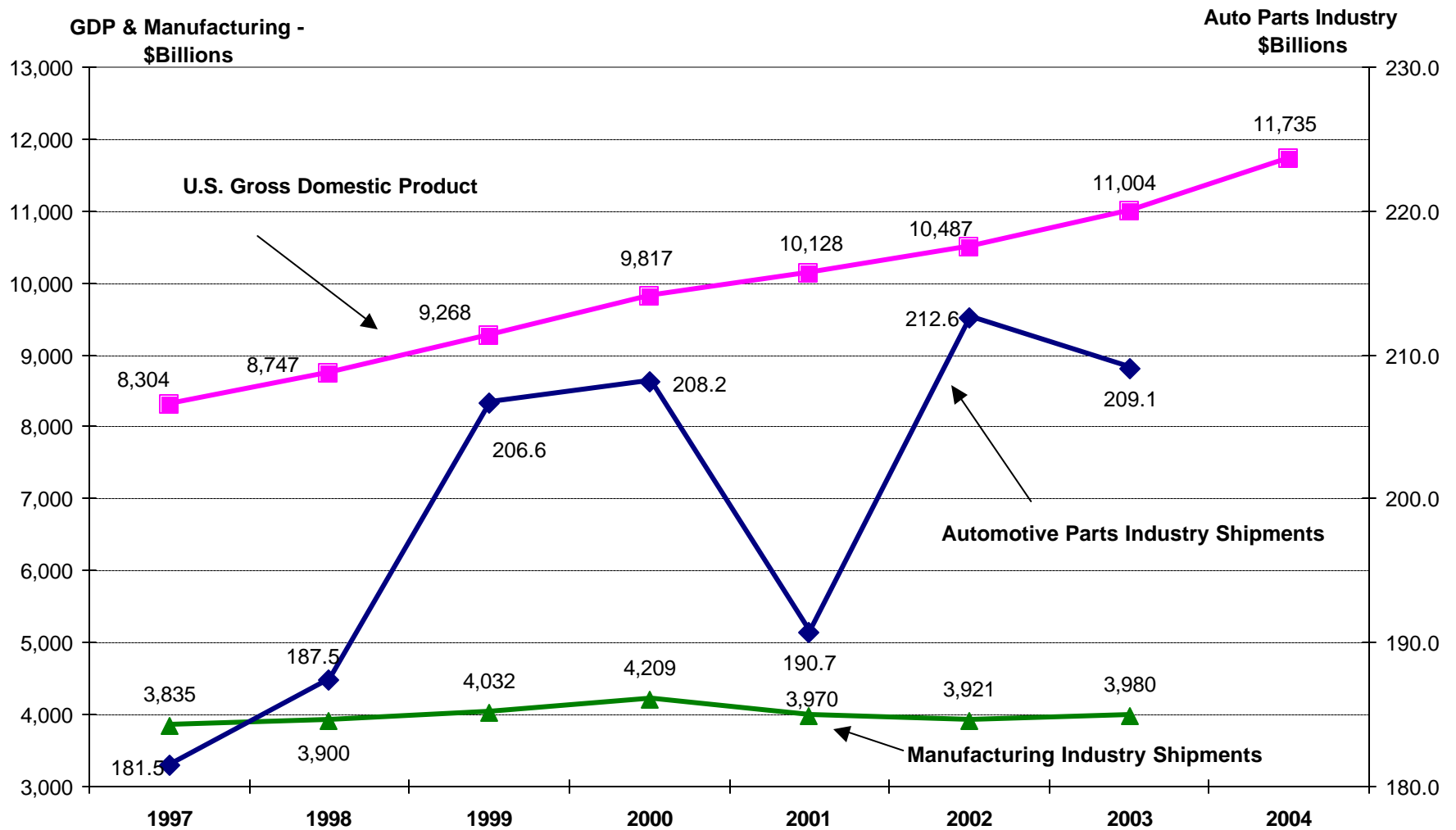


Chart 3

Employment in the U.S. auto parts industry has consistently been between 5.1 percent and 5.3 percent of the total manufacturing employment.

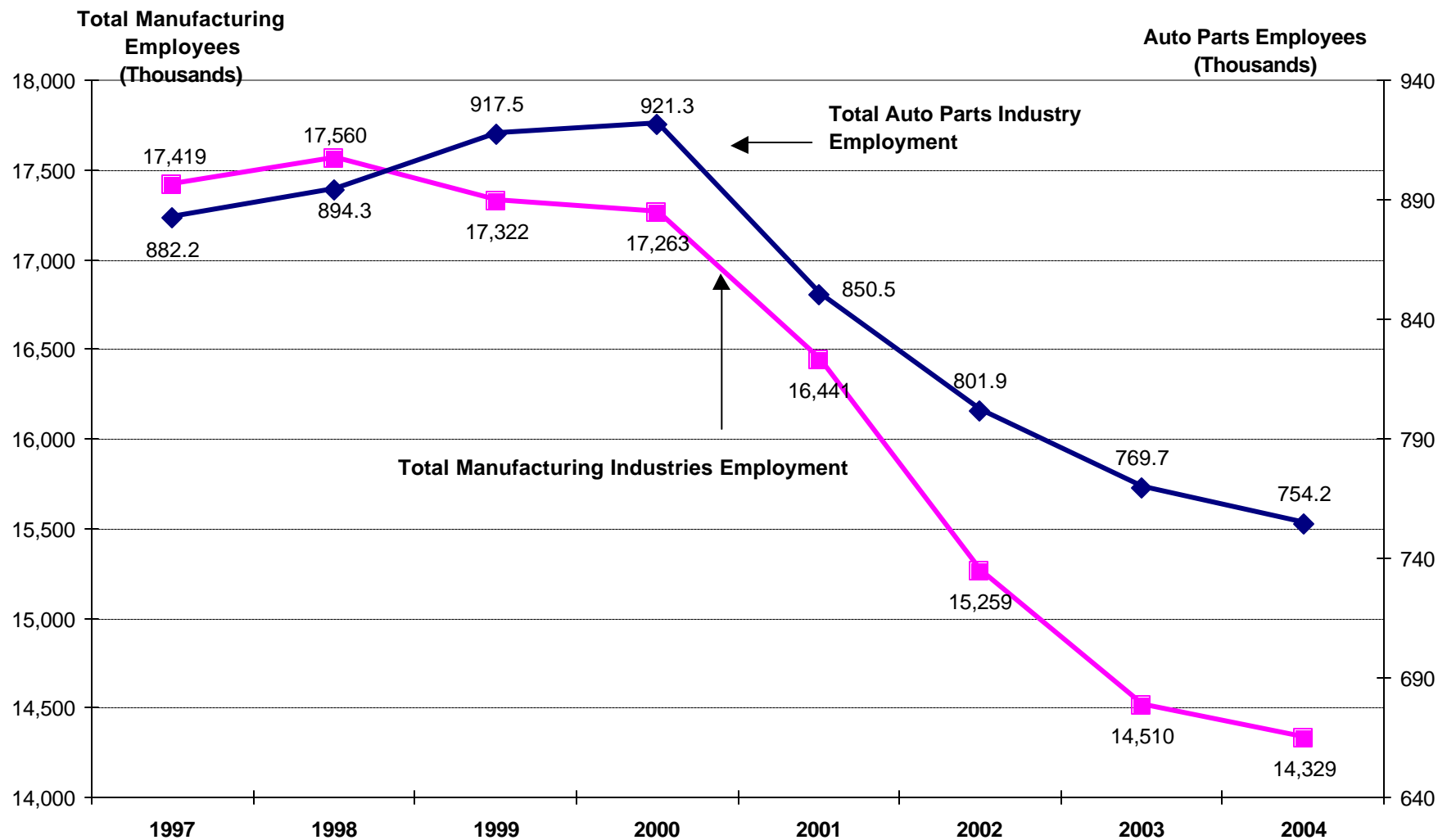
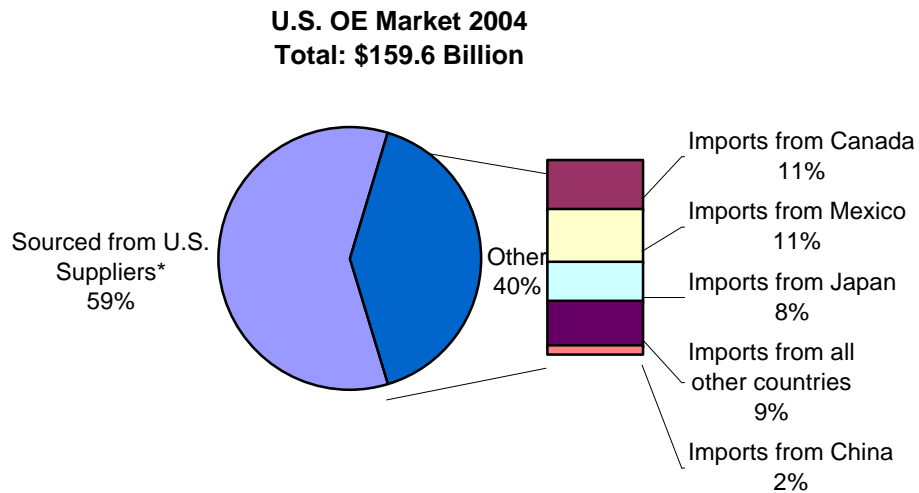
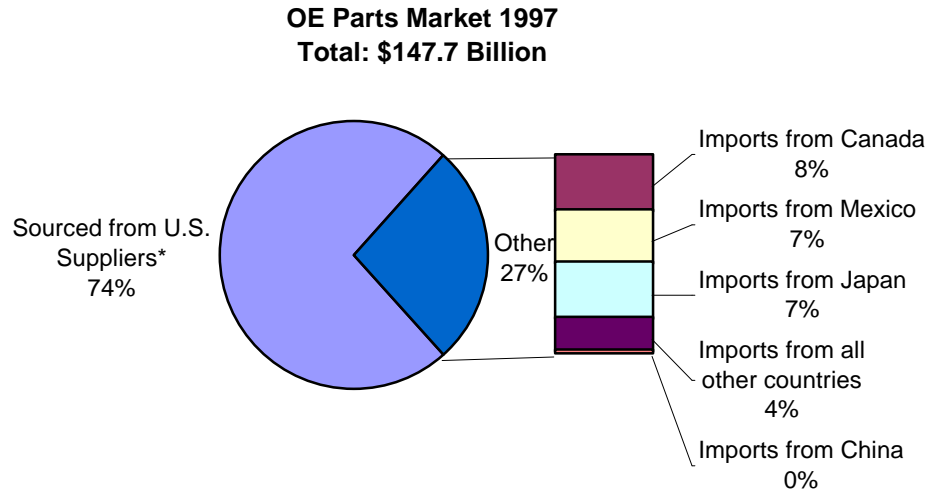


Chart 4

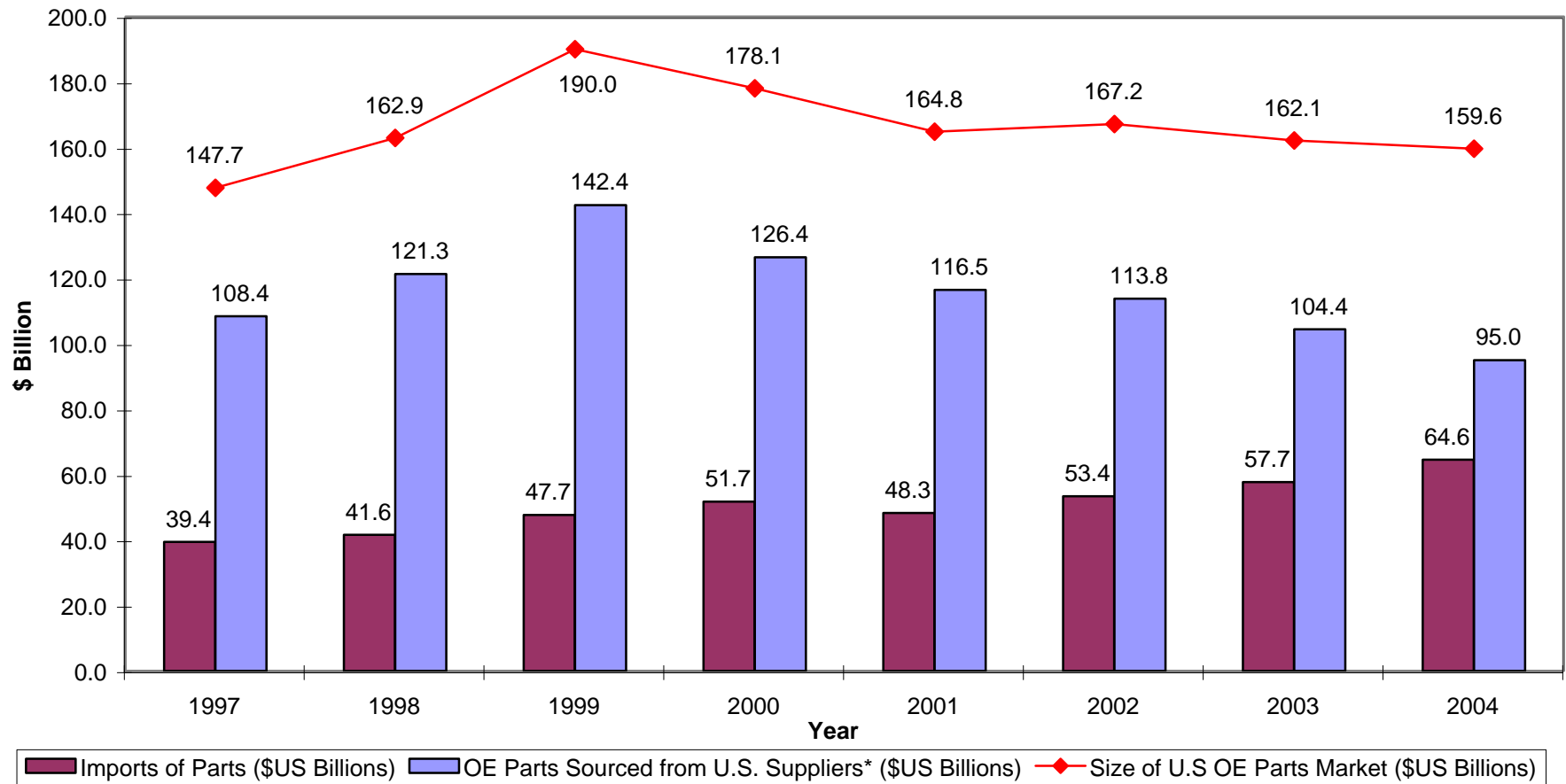
U.S. Original Equipment Parts Market, 1997 and 2004



*U.S. suppliers include U.S. affiliates of foreign suppliers

Source: DesRosiers and Automotive News.

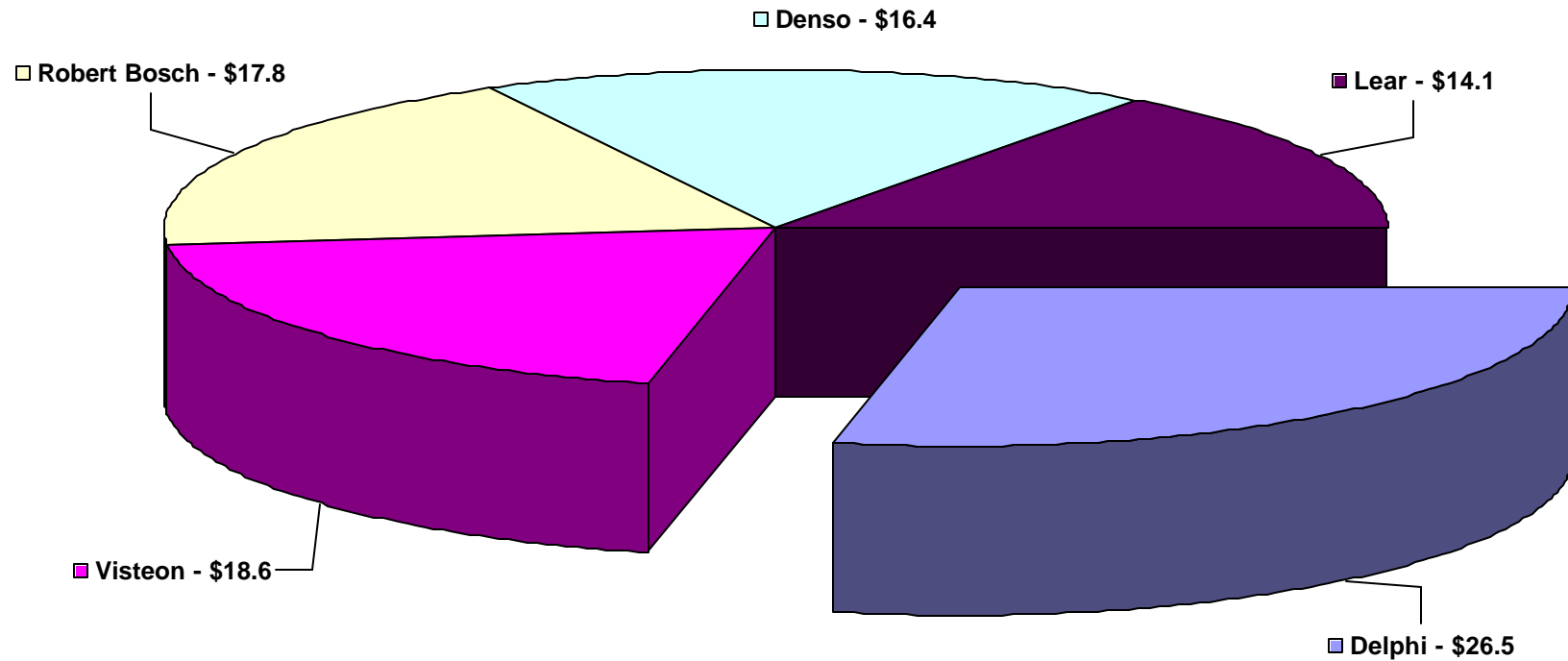
Chart 5
U.S. OE Parts Market, 1997-2004
 U.S. sourced* parts declined from 74 percent of the market in 1997
 to 59 percent of market in 2004.



Source: DesRosiers and Automotive News. *Includes U.S. Affiliates of Foreign Manufacturers.

Chart 6

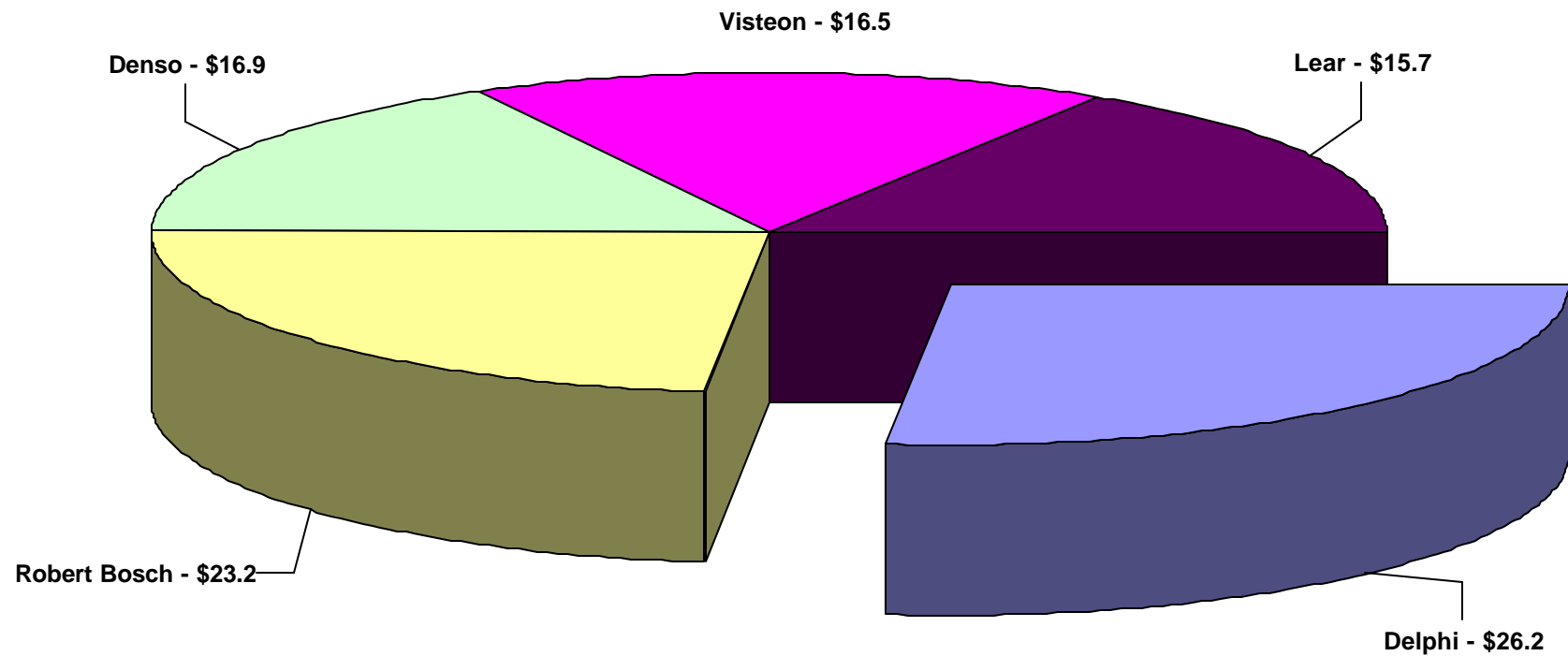
In 2000, the top 5 global suppliers of original equipment parts had sales of \$93.3 billion. Delphi's share was 28% and Robert Bosch's share was 19%.



Source: Automotive News

Chart 7

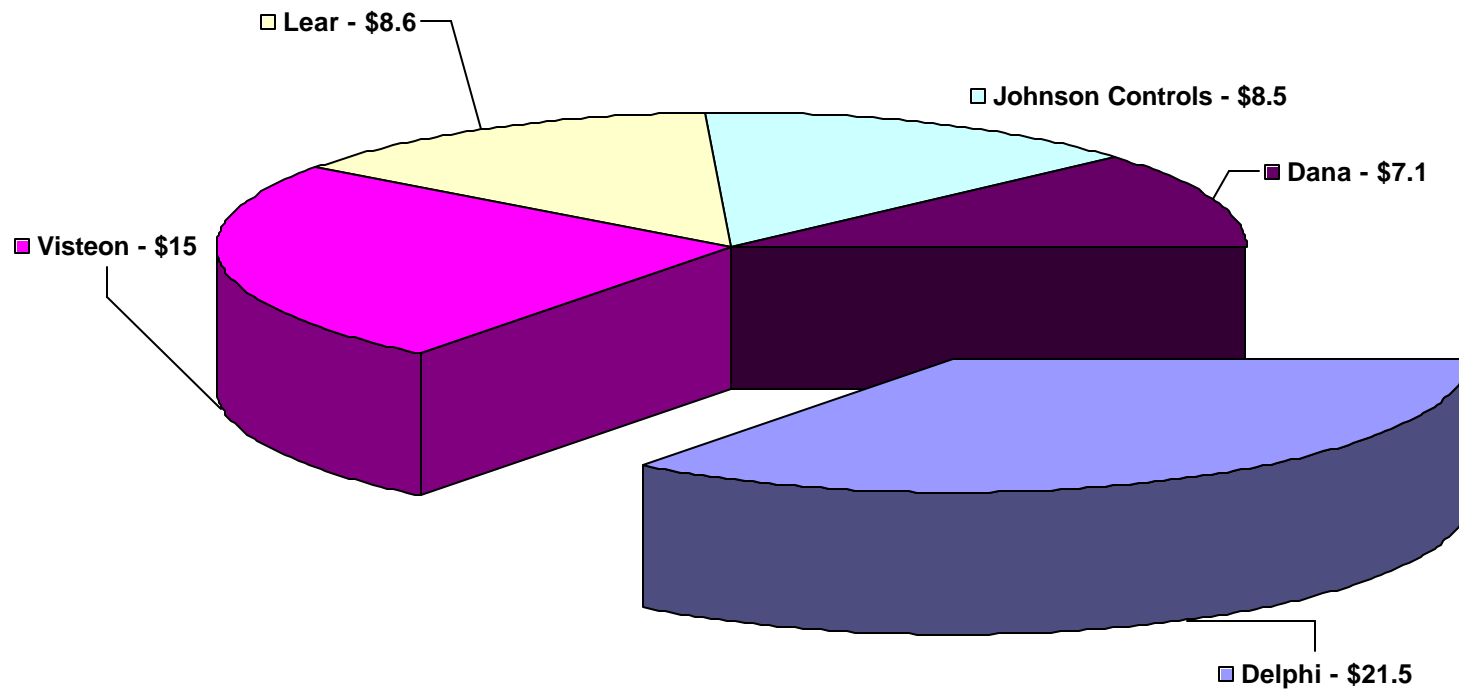
By 2003, their sales had dropped 2.2% to \$98.5 billion, but Delphi's share decreased to 26% and Robert Bosch's Share increased to 24%.



Source: Automotive News

Chart 8

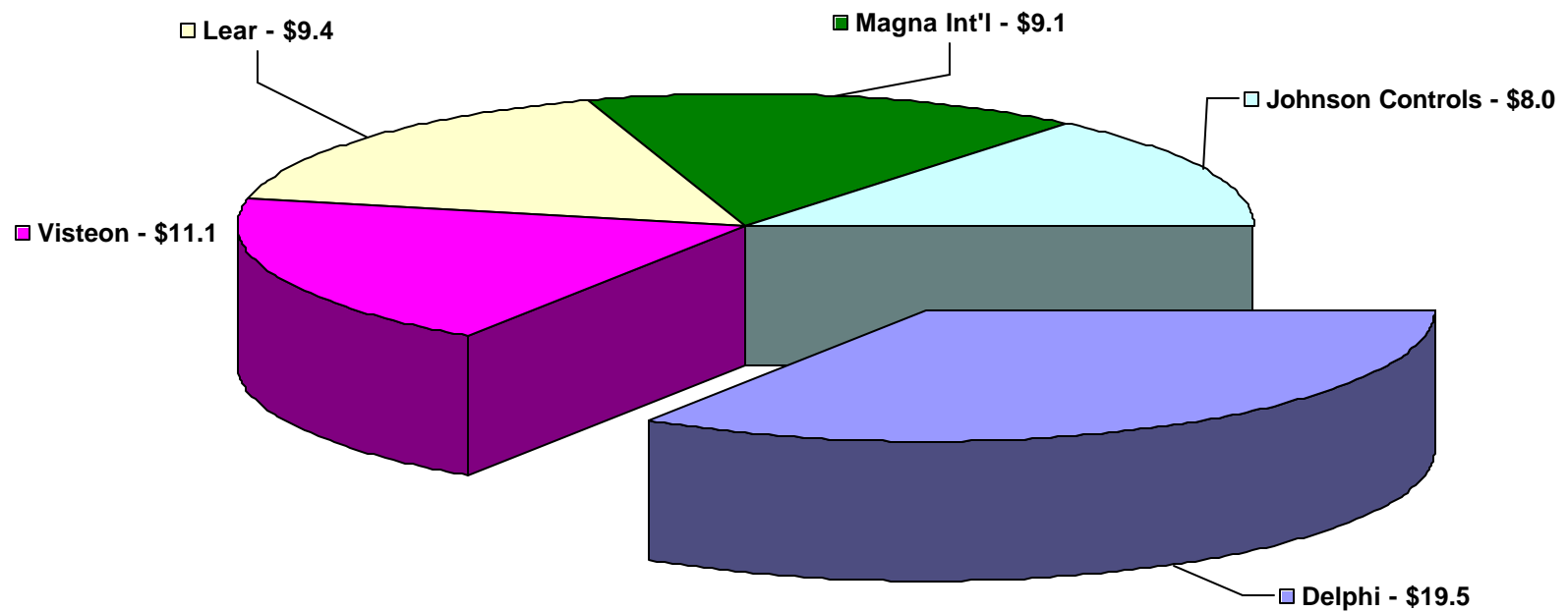
In 2000, the Top 5 U.S. suppliers in the North American market had O.E. sales of \$60.7 billion. Delphi accounted for 35% of that total.



Source: Automotive News

Chart 9

By 2003, the Top 5's sales had shrunk by 6% to \$57.1 billion.
Delphi's sales declined by 9% and its share shrank 1 % to 34%.



Source: Automotive News

Chart 10

U.S. auto parts exports grew 13% between 1997 and 2004, but imports jumped 64%.
The result was a 641% increase in our deficit with the world.

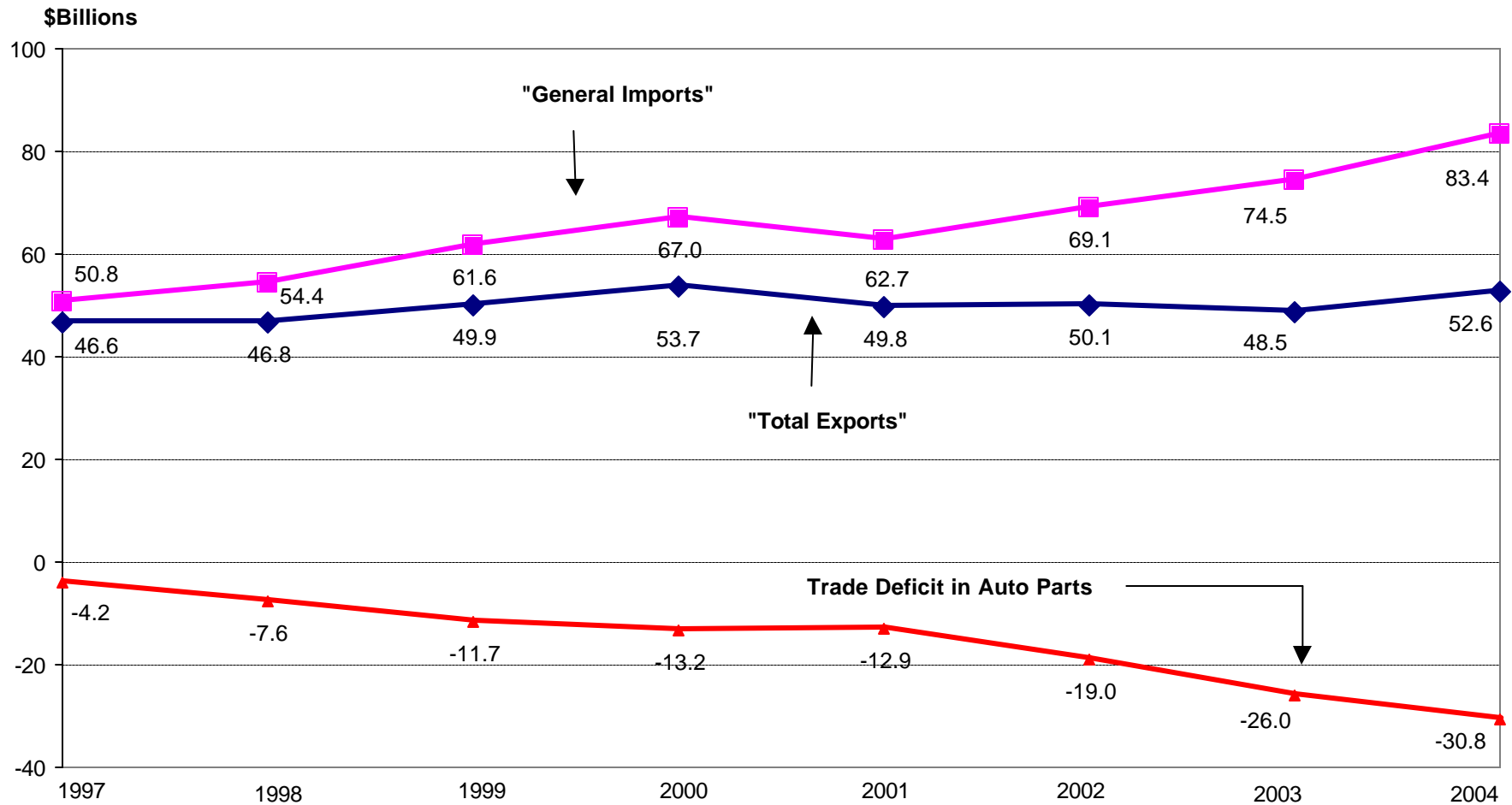
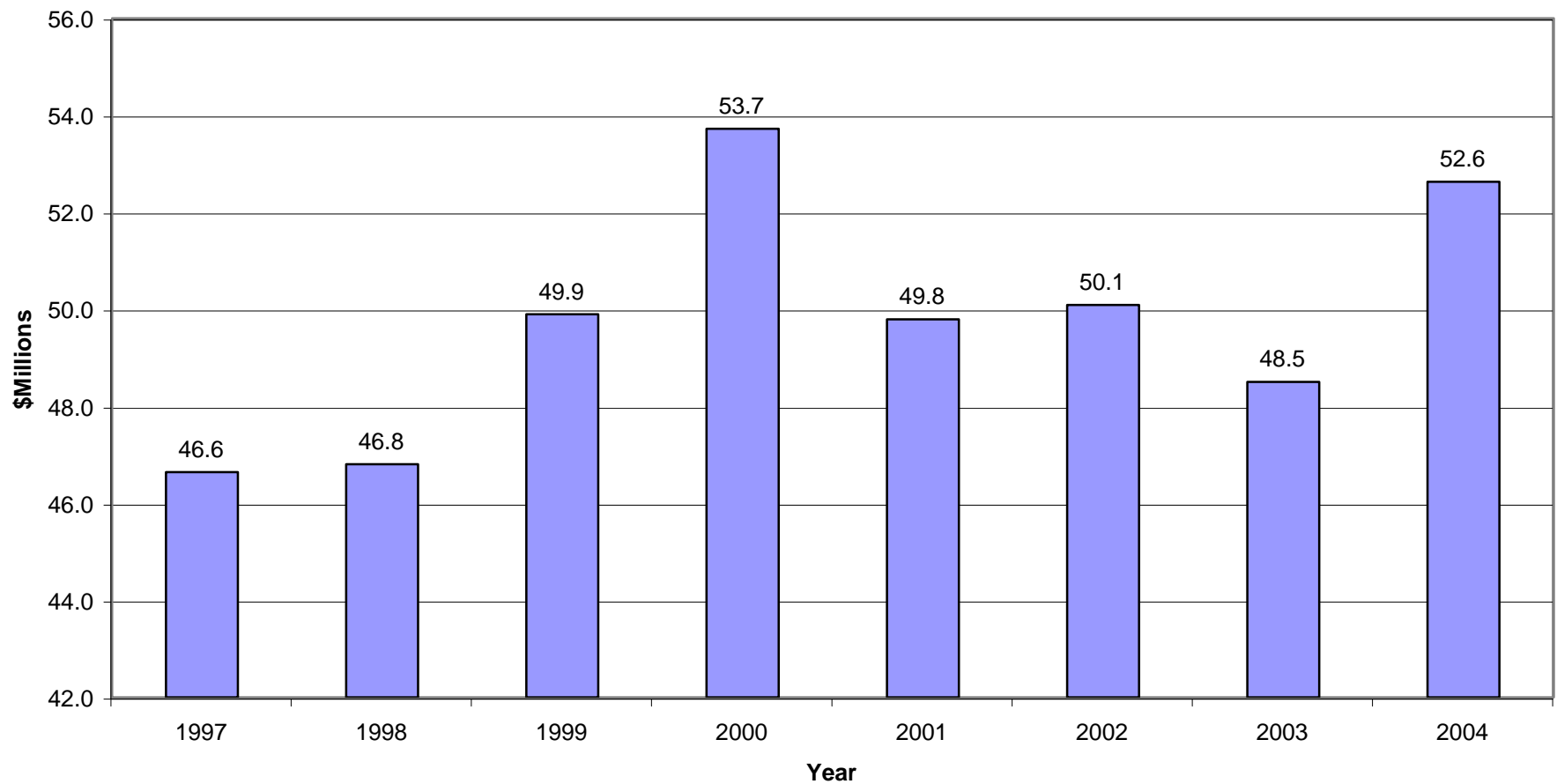


Chart 11
Exports increased 8.5 percent in 2004...

U.S. Automotive Parts Exports, 1997-2004



Source: U.S. Department of Commerce, Bureau of the Census.

Chart 12
Canada accounted for 58 percent of U.S. Automotive Parts Exports in 2004

Total: \$52.6 Billion

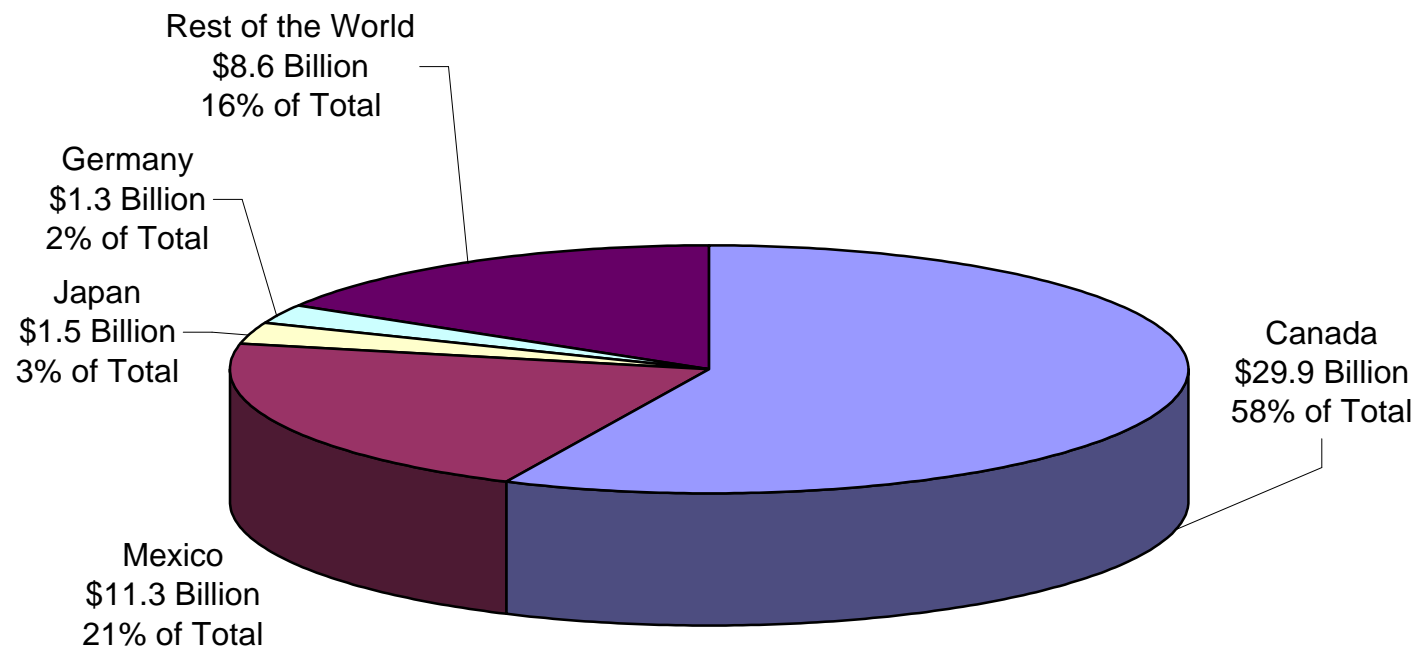
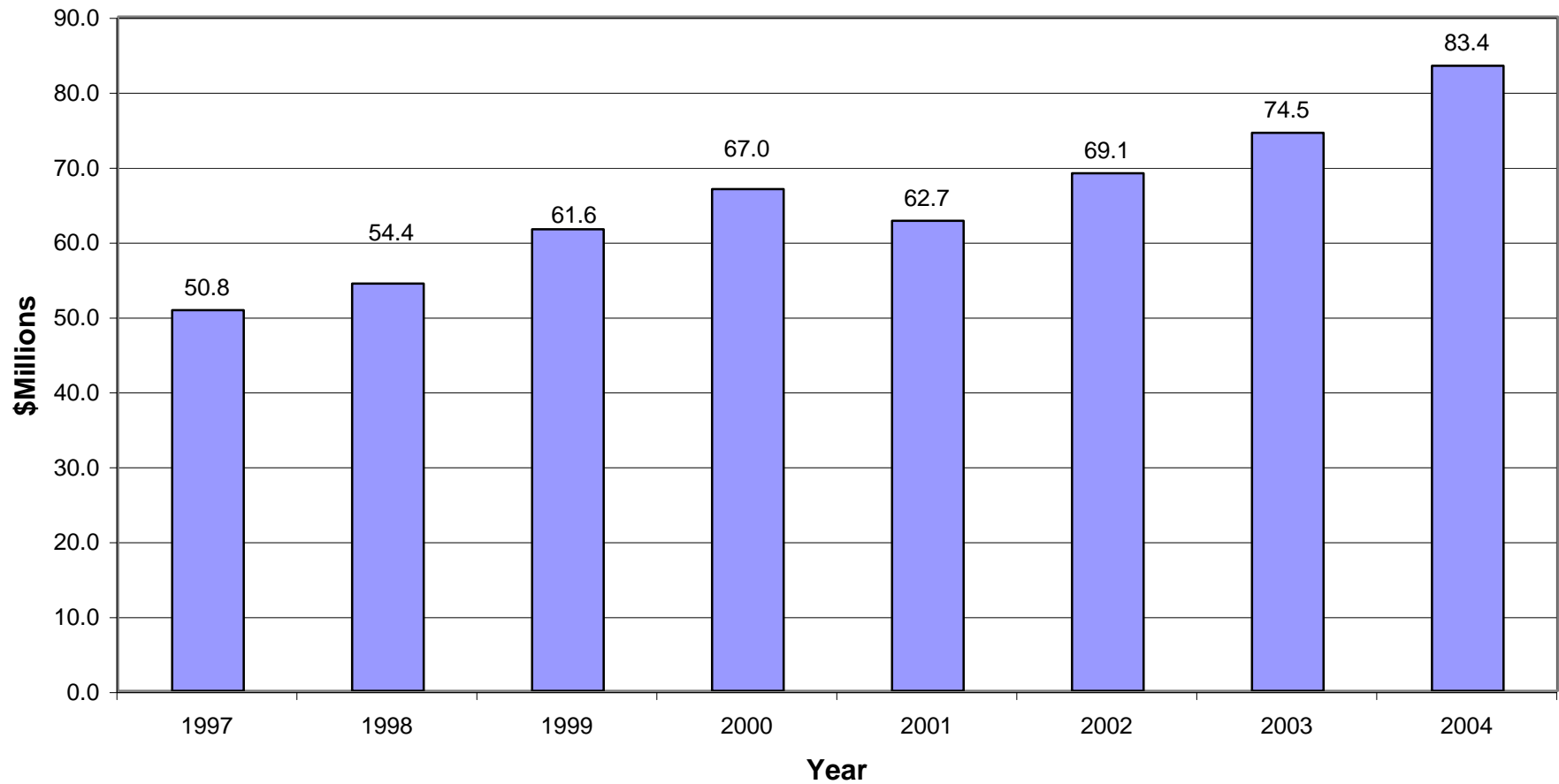


Chart 13
while Imports increased 12.1 percent in 2004,
U.S. Automotive Parts Imports, 1997-2004



Source: U.S. Department of Commerce, Bureau of the Census.

Chart 14
Canada and Mexico Accounted for 52 percent of U.S. Automotive Parts Imports
in 2004

Total: \$83.4 Billion

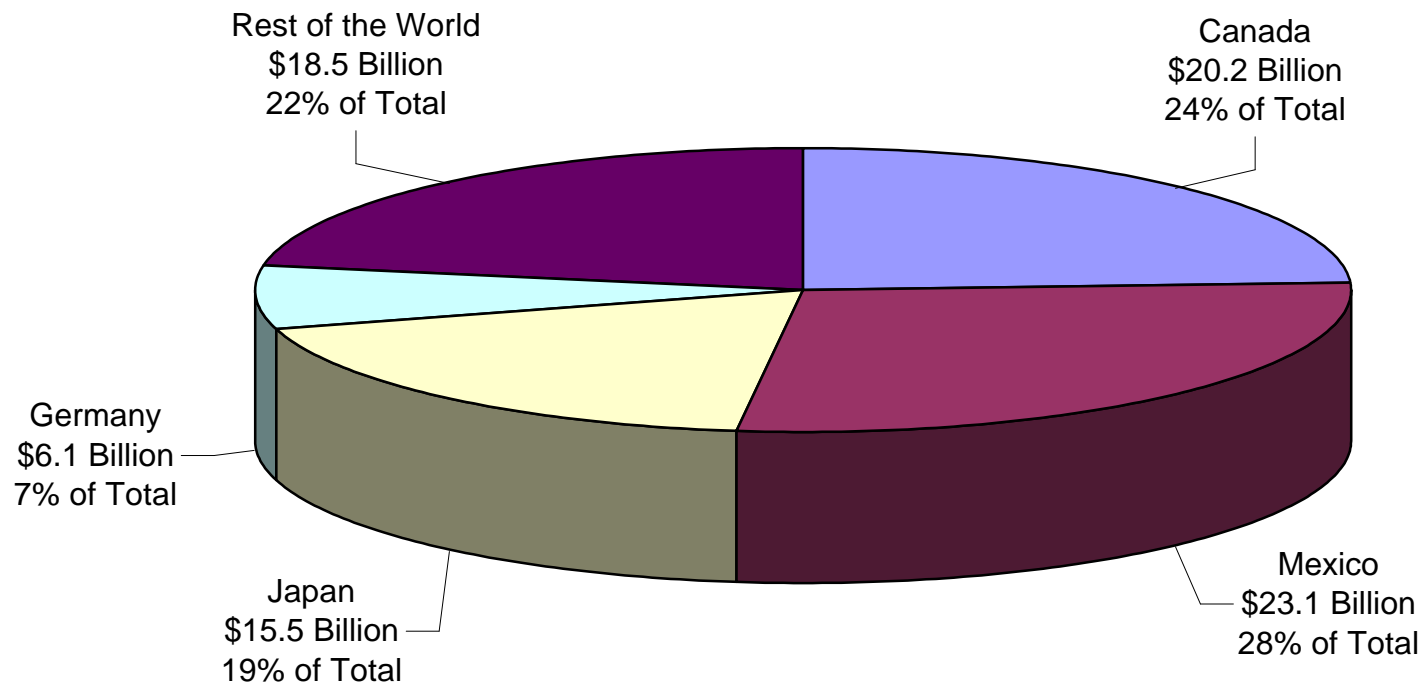


Chart 15
resulting in a 18.7 increase in U.S. automotive parts trade deficit.
U.S. Automotive Parts Trade Balance, 1997-2004

